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ENDEMIC TYPHUS*

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On account of the lateness of the hour, I will, instead of reading a formal paper, make a few observations on the subject of endemic typhus. This disease, as far as recognition goes, is new in our community. The reduction of some diseases, like tuberculosis and others, gives opportunity for the study of what were rarer diseases; likewise, improved and more extensive research by governmental and private agencies assists in new discoveries. In my opinion, and I believe my opinion is shared by some, these diseases we are beginning to find now have existed for a very long time, and it is really through having a clearer method of diagnosis and probably a better chance of diagnosing them, with the lessening of the older and more prevalent diseases of former times, that some knowledge is gained.

The rat, in relation to our common everyday life, has always been known as a pest and a nuisance. It is only in the last score or more of years that the importance of the rat in the propagation of disease has become known. Some few years ago in New Orleans we had, on two occasions, what might have been a severe outbreak of bubonic plague, which as those of you who are medical men known already, is carried principally by means of the ordinary house rat. Among the house rats, three varieties are very prevalent. I am now talking particularly to the lay people present. You may very often wonder why, with all the money the government spends and all the efforts that have been made, and which even the housewives have made, to get rid of this pest, rats seem to be as numerous as ever. The reason is the great prolificness of the rat. Rats seem to habituate themselves easily to all sorts of environments and are able to breed under all sorts of conditions. Not only the rats, but other rodents and even insects, about which we do not know, seem to have in their bodies certain germs that appear to be able to develop a capacity to invade other animals.

In regard to diseases of the Rocky Mountain fever type, one of the major discoveries was made by King, who is well remembered by many of us, for his researches on malaria. He was stationed for some time at Mounds. He proved that the tick was a vector of the disease which has existed in the Bitter Root valley of Montana.

Tarbadillo, on the Mexican border, and Brill's disease, in New York, have been recognized as a milder type of typhus for years. Nicolle's demonstration of the role of the body louse in the transmission of typhus stimulated further investigation and established a close relationship between the Old World typhus and the New World type. No one knows just exactly to what group of organisms these germs belong. They have been called the rickettsia in honor of Ricketts, who lost his life while studying them in Mexico. The tendency, I believe, among most people who have had a chance to observe them is that they are small bacteria which have probably grown up from an original insect host and adapted themselves to infection of rodents and man.

In New Orleans, about five years ago, we had a small outbreak of cases principally among transients. I had an opportunity at that time, by inoculating a guinea pig with some live fleas that were caught on rats, to observe these bodies. If you have adequate laboratory facili-

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ties, it is easy to transfer them from one animal to another. The germs causing typhus and typhus-like disease have been recognized as rickettsia and appear to have met the major postulates of Koch.

The point I want to make before asking Dr. Williams to continue the discussion is that someone tonight, I think it was Dr. Fasting, remarked on the paucity of cases that were shown in the report of the Board of Health where examinations for hookworm and malaria had been made. That is also true in regard to typhus. It was not until we were asked by the United States Public Health Service, some fifteen years ago or thereabouts, to run, in all bloods sent in for Widal reaction, a test for the agglutination for undulant fever, that we began to find any evidence of undulant fever. Now it is commonly known that the disease is quite prevalent. While no one claims definitely that the X-19 group of Proteus has any etiologic connection, everybody admits that from the standpoint of diagnosis it is quite effective. With the large number of cases reported throughout the United States and the work that has been done, there must be large numbers of these very mild cases of endemic typhus which have a very low mortality, not over 2 per cent, I believe. I do not think we get five requests a month for this examination.

I am bringing this subject before you, in the hope that the profession and the laity will become typhus conscious and that greater care will be taken to recognize cases. This recognition will be, I am sure, facilitated by more frequent laboratory tests and the prompt reporting of suspicious cases. The danger of the diseases which are carried by rodents is tremendous. Within the last few months it has been found that the ground squirrel and other rodents infected with bubonic plague have crossed the Rockies from California. Plague infected rodents are now on the eastern border of the Rockies. Heaven knows what will happen if they ever get into the wheat fields and places where living will be easy for them, and where they can multiply and spread their infection.

DISCUSSION

Dr. C. L. Williams (Algiers): I am convinced that Dr. Seemann asked that I discuss his paper on typhus because he knew that about twelve months ago I contracted typhus and he evidently wanted me as his exhibit. I might add that I also contracted one of the diseases Dr. Faust discussed in a previous paper, dengue fever. In fact, I had it twice. I mention this as a warning to you not to get these exotic diseases because, if you do, you will be in demand whenever they come up for discussion.

The epidemiology of endemic typhus is quite interesting and is an excellent example of some of the unexpected results that follow medical research. The stimulus in this instance was the demonstration in 1910 that the so-called Brill's disease, which had been found in some of our Eastern cities, was really typhus fever. This came as quite a shock to the medical profession. It started a search throughout the country for similar cases, and the result was that in a short time, within a few years, a large number of cases of typhus were found throughout the Southern states.

As soon as this became evident, epidemiologists started to look for louse association, it having been demonstrated that typhus was generally carried by body lice. It became glaringly evident that there was no louse association. That was something brand new, and at once the search was started for an animal reservoir. I am jumping very large gaps here in order not to take up too much time. If an epidemiologist misses a known method of transfer, he often starts looking for an animal reservoir of infection. In this case it is not very remarkable that the suspicion was centered upon man's worst enemy, the rat, and very shortly the suspicion was proved correct. It was, of course, natural that the rat flea should then be suspected as the vector, and that was soon proved to be correct also.

We have, therefore, another disease to which man is subject which is principally carried by another animal, and the history of such diseases has always been that they are extremely difficult to eradicate. Bubonic plague, of course, is the classical example, and to all intents and purposes, except that the disease is typhus and not bubonic plague, the Southern states are in the status of being plague infected. The conditions are very much the same.

To divert a moment to the rat, man is probably going to be forced to control the rat. It is the one wild animal that is closely associated with man and it carries entirely too many human diseases. Here is a list of those that I can pick out offhand: bubonic plague, typhus, infectious jaundice, rat bite fever, trichina, dwarf tapeworm, Lamblia intestinalis, amebic dysentery, tularemia, foot and mouth disease, and at least two diseases of horses. In addition to the fact that it is known to carry destructive diseases, it is an economic pest. It would appear there is ample justification for the

expenditure of a considerable amount of energy to eradicate this species of vermin.

Further studies of endemic typhus developed the remarkable fact that the strain in rats was distinctly differentiated from the louse-borne typhus of the old world. Fortunately, it is a much milder disease, the death rate being about two per cent. It is probably this mildness, coupled with the rather evanescent nature of the rash, which is one of the principal signs, that has caused it to be missed for so many years in this country. In addition to that, the cases are sporadic and do not show contact with other cases. Naturally, they do not. The contact is with rats and through the rat flea, so that you would not see other associated human cases.

The description, mild typhus, however, is a purely relative term. It is mild as compared with louse-borne typhus, which is a truly formidable disease. It may even be described as mild compared with, say, typhoid fever because of the much longer duration of the latter. It is not truly a mild disease. I would say it probably may best be compared with paratyphoid fever, and I believe it is very often confused with paratyphoid. I have accurate knowledge of two other cases, in addition to my own, and those were sick for quite some time, very sick, and they were all of a year in recovering. I was a bit more fortunate. I was in bed about a month, and some six or eight months in convalescence.

It is generally believed that a great many more cases occur than are recognized or, at least, reported, the assumption being that when they are not reported it is because they are not recognized. The virus is known to be wide-spread.

I rather suspect, in conclusion, that Dr. Seemann got me up here as his exhibit very largely for the purpose of bringing before you the fact that typhus is no respecter of persons. Any person in any walk of life may be attacked. The rat is an ever present menace, and the rat flea may bite even a doctor.

SOME PUBLIC HEALTH ASPECTS OF PARASITIC INFECTIONS IN THE SOUTHERN UNITED STATES, WITH SPECIAL REFERENCE TO LOUISIANA*

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INTRODUCTION

In considering the public health aspects of diseases of parasitic origin the physician is confronted with a two-fold problem, namely the reduction or eradication of the causative organism in a particular population group and the raising of the threshold of resistance of the individual against the invading organism. In the Southern United States, and particularly in Louisiana, we are faced with conditions which are at the same time less difficult and more difficult to solve than those in the North. Our climate is more equitable; on the whole we have more sunlight and moisture. In our state crops may be produced throughout the year, food is relatively cheap and heavy clothing is not commonly needed. Certain diseases, such as scarlet fever and possibly measles and poliomyelitis are less severe, and constitutional diseases due to climatic hyperstimulation are less conspicuous than they are in the North. Yet poverty and malnutrition are more common and infectious diseases, such as amebiasis, malaria, dengue, endemic typhus, hookworm disease, ascariasis and other parasitic infections, play a much more important role than they do in the North. Furthermore, the mildness of our climate, without stimulating shock, steps down our metabolism. On the whole, therefore nature is kinder to us, but at the same time places more obstacles in our way to progress.

As a medical parasitologist I propose to consider a few of our parasitic infections in the South, and particularly Louisiana, in the light of their public health implications. The examples selected concern certain of our more common diseases of animal origin or due to animal transmission. While they constitute only a fraction of the diseases with which the physician and public health administrator are confronted, they are all peculiarly important in the South.

PROTOZOAN AND HELMINTH DISEASE

Malaria. It is altogether probable that malaria was present among the native Amerinds before the voyages of Columbus. Powdered Peruvian bark (cinchona powder) was used as a febrifuge in malaria fevers by the Peruvian Indians long before it was introduced into Europe in 1640. Tradition relates that the early French settlers at the mouth of the Mis-

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sissippi River were obliged to abandon their first hamlet and move up to the vicinity of New Orleans partly because of malignant malaria which prevailed in the former area. While mild tertian malaria existed in the Connecticut valley, in central New York State and in the Western Reserve in Ohio, at no time were the pioneers in the North confronted with epidemics of malignant malaria, such as existed south of the Ohio River from the Atlantic Coast to eastern Texas.

Even as late as the Spanish American War physicians in camps, such as Chickamauga, confused typhoid fever with malaria and many enlisted men died of typhoid in these camps because they were treated for malaria. This was due primarily to the slow recognition and acceptance of the *Plasmodium* in the red blood cell as the causative agent of malaria, although Laveran had announced its existence as early as 1881. It is now known that laboratory demonstration of the specific *Plasmodium*, whether tertian, quartan or estivo-autumnal in type, is the only sound diagnostic basis for malaria. Nevertheless, considerably less than ten per cent of the estimated cases of malaria in the South for the year 1933, based on the expected ratio to malaria mortality data, were reported to state health officers (Faust and Diboll, 1935[13]). In Louisiana the situation is even worse than in most Southern States, since malaria morbidity data are not even compiled in the vital statistics files of the State Board of Health. Calculated on the basis of 200 cases for each death (a minimum expected figure), there were approximately 32,000 cases of malaria in Louisiana in 1932, 85,000 cases in 1933, 74,000 cases in 1934 and 72,000 cases in 1935. Why can we not have the actual figures? Until every suspected case is verified by microscopic blood examination, physicians and public health workers will not know the actual incidence of this infection in our state. Part of the difficulty is due to overwork and part to carelessness, but the real fault lies in the inadequate training, lack of experience and unwillingness to examine blood films for the malaria parasite. Even in mild and chronic infections, where these parasites are relatively few in peripheral blood, concentration methods have been devised, so that in most cases the organism can be readily discovered. The greatest difficulty arises when suspected cases, previous to diagnosis of the organism in the blood film, are given a partial treatment with quinine, which tends to destroy the circulating parasites or to drive them out of the circulating blood. Perhaps the most feasible method of attacking this problem in Louisiana would be to educate the population away from self-diagnosis and self-treatment and at the same time instill in them the need for a blood-film examination for the parasites. If the family physician is unwilling or incompetent to make such examinations, the State Board of Health should provide proper diagnostic facilities for this work, just as is done in some of our sister states, where increased blood-film diagnosis has been bound to result in decreased morbidity and mortality rates.

Preceding treatment it is important to have microscopic examination of the blood to provide diagnostic information not only of the species of malaria parasite, but also of the prevalent stage, whether the actively growing parasite, the segmenter or the gametocyte. A preponderance of the former two types indicates a relatively low degree of host response to the infection, while a large number of gametocytes probably indicates satisfactory host reaction to the infection. Such information is very important in providing an index of the patient's own fight against the disease. Following a somewhat different angle of approach we now have reason to believe that considerable immunity is provided by an attack of malaria against subsequent attacks by the same (i. e. homologous) strain, while no such protection is afforded against heterologous strains of the same species or of other species of the malaria parasite (Boyd and Stratman-Thomas, 1933,[3] 1933[4]).

While the original discovery of the efficacy of cinchona powder in malaria was probably pure chance, the development of various related cinchona alkaloids and derivatives, as well as the newer malaricidal drugs, plasmochin and atabrine, has proceeded as a result of biological tests, particularly on birds experimentally inoculated with avian malaria. Even the testing

of such drugs on controlled groups of human subjects may be considered more strictly an experimental procedure than a clinical demonstration.

In 1898 Sir Ronald Ross proved experimentally that *Culex* mosquitoes transmit bird malaria. Almost immediately parallel experiments indicated that the three human malaria plasmodia were transmitted to man by mosquitoes of the genus *Anopheles,* which served as the definitive host of the parasite. These epochal discoveries opened up new avenues of approach to malaria control. All types of such control at the present time are directly or indirectly related to this fact. While the species of anopheline mosquitoes throughout the world were mostly known and accurately described by 1900, the exact relationship to malaria of the several species of mosquitoes of this genus in any particular locality required experimental testing. It was found that all species under comparable controlled conditions did not serve equally well as definitive hosts and transmitters of the infection, and that a good experimental transmitter was not necessarily a common transmitter in nature. Thus in Louisiana *Anopheles quadrimaculatus* is the only known natural source of human infection, although two other anophelines (*A. crucians and A. atropos*), which are good laboratory transmitters of the infection, are commonly found in our State. The close correlation between limestone erosion areas in the surface soil and prevalence of malaria in Georgia and Northern Florida suggest that such a topography favors the breeding of the appropriate species of mosquito, and this is actually the environment which *Anopheles quadrimaculatus* prefers (Boyd and Ponton, 1933[2]). Only within the last five years have investigators been able to perfect laboratory conditions comparable to those in nature, so that the complete life cycle of the malaria parasite in the mosquito might develop under observation (Boyd and Cain, 1932[1]). In Europe it is believed that different races of the same species of mosquito react differently to malaria infection; in the United States no such observations have as yet been made.

In conjunction with the mosquito-phase of the life cycle of malaria parasites, workers have been able to determine why tertian malaria (i. e. due to *Plasmodium vivax*) is distributed endemically in temperate as well as tropical belts, whereas estivo-autumnal or malignant tertian infection (i. e. due to *P. falciparum*) is confined to the warmer regions of the world. Thus the tertian parasite finds an optimum development at a temperature of about 77° F., while the malignant parasite requires an optimum of 86° F. mean average temperature. Since we believe (although we have little actual proof) that malaria mortality is due almost exclusively to infections with the estivo-autumnal parasite, the geographical distribution of these species of malaria plasmodia and their specific diagnoses have additional prognostic significance.

Knowledge of the role played by anopheline mosquitoes in the transmission of malaria constitutes the basis for control measures. Screening of homes and bed-nets prevent anopheline mosquitoes from biting man, particularly at night. Other measures, such as drainage and the lowering of water levels, reduce the breeding of all types of mosquitoes. Still others, such as Paris green and oil spraying and breeding of minnows in water where mosquito larvae develop, have been utilized in attempts to kill the larvae. Finally, certain drugs, such as plasmochin, sterilize the gametocytes in the human blood stream so that they are unable to develop when taken into the stomach of the female anopheline mosquito. It must be emphasized that in any particular area, such as Louisiana, no program based on projects carried out elsewhere, is likely to succeed until it is adapted to our own peculiar needs.

Only a few of the many important public health aspects concerning malaria have been cited, but they prove unquestionably the essential contention of this paper, namely, that such facts form the foundation of this important public health menace in our midst.

Amebiasis. This infection is produced by *Endamoeba histolytica,* a simple protozoan parasite which lives primarily in the wall of the large bowel. Although the active stage of the parasite was first discovered by Lösch in 1875, the wide-spread distribution of the infection and its protean characteristics are even today

inadequately understood. The cysts of this parasite and their characteristic differences from the several non-pathogenic amebae in the human intestine were first carefully studied during the World War. Although Simon (1909[19]) and DeBuys (1914[8]) reported clinical cases of amebiasis and their comparative rarity in New Orleans, it was not until 1928 (Faust, 1930[10]), when an intensive protozoological survey of a representative cross-section of Wise County, Virginia was made, that the high incidence of amebiasis in the Southern United States was definitely suggested. Since that time workers in New Orleans (Faust, 1931[11], 1933[12]; Faust and Headlee, 1936[15]), Tennessee (Meleney, Bishop and Leathers, 1932[17]), and Atlanta (Dougherty, 1933[9]) have abundantly confirmed the original findings. The efforts of the medical parasitologist, in cooperation with the clinician, have demonstrated that dysentery constitutes only a small part of the entire clinical or epidemiological picture; that there are many chronic cases, in which dysentery or diarrhea may rarely occur but in which constipation is the rule. All such cases, however, have more or less definite intestinal symptoms and frequently have systemic intoxication as a result of the infection. Furthermore, the largest group of all consists of so-called "carriers", who are without appreciable or demonstrable symptoms. Yet both biological and clinical evidence leads us to believe that these amebae are always tissue parasites and that a "carrier" at any time may become clinically ill as a result of the infection in case his threshold of resistance becomes lowered. Most important of all, carrier cases, which are "cyst passers", are the source of infection for other persons, as a result of uncleanliness and of the insanitary disposal of their fecal wastes. In other words, they should be placed by public health officers in the same category as typhoid "carriers". It is conservatively estimated that not less than 5 per cent of the entire population of the United States is infected with this pathogenic ameba, and that in the South the incidence is double, triple or quadruple, depending on the particular locality.

What of amebiasis in Louisiana? As far as I am aware no extensive survey has been conducted in this State, except that carried on in the Parasitology Laboratory of Tulane Medical School during the past seven years, covering a representative sampling of the Charity Hospital population and welfare clinics in New Orleans. While certain groups are particularly parasitized by *Endamoeba histolytica*, it is safe to estimate that 10 to 15 per cent of these charity patients are infected. Since the country population is more heavily infected than the urban areas, a conservative estimate of the amebic infections in the State is 200,000 individuals, at least 80 per cent of whom are "cyst passers" and therefore sources of infection for others. Yet we are treating only persons actually suffering from evident amebic colitis or amebic liver abscess. This is due both to the failure to recognize clinically all but the more severe cases of the disease and to the almost complete neglect of routine fecal examinations of patients, which alone will reveal the presence of the infection in the greater part of our infected population. Moreover, I should be surprised to learn of more than twelve individuals in Louisiana who are competent to diagnose amebiasis in all of its manifestations. Until we know how to diagnose this infection it is futile to treat the cases systematically or to outline a program of control.

Furthermore, at the present time there is no common agreement regarding the exact method or methods by which amebiasis is disseminated, although transmission by food handlers, ingestion of the cysts in drinking water or contamination by flies, are all possible means. Such water-borne epidemics of amebic dysentery as developed in two Chicago hotels in 1933, and as have occurred previously in the Philippines and in Panama before sanitary water systems were installed, need to be distinguished from the endemic spread and maintenance of the infection in a given area. In any event, before public health authorities can adequately handle and control the infection, important additional epidemiological data need to be discovered to provide a basis for prophylactic procedure. In the meantime we are justified in viewing the amebic problem as analogous to that of typhoid.

Hookworm Disease. This disease is as old as the human race, but the small round worm

which produces the disease was not discovered until 1838, when the Italian physician, Dubini, found the organisms at the autopsy of a Milanese woman. We owe our knowledge of the life cycle of the worm, of its entry into and migration through the body and of its development to maturity in the small intestine, primarily to the parasitologist Arthur Looss, whose experimenal work was conducted on himself and on dogs. Clinically the hookworm was found to be responsible for a profound secondary anemia. The discovery of a separate species of human hookworm in the Western World by Charles Wardell Stiles, from material furnished by Allen J. Smith of Galveston, Texas, and Bailey K. Ashford, of Puerto Rico, opened an important clinical and public health problem which was to produce the world-wide health investigations of the Rockefeller Foundation. The discovery that the "American" hookworm was equally common in Tropical Africa, in Southern Asia and in Melanesia, Polynesia and Micronesia, has offered strong support for the view that the infection was introduced into the Western World with the importation of negro slaves. It was discovered that white patients suffered more severely from the same intensity of infection (i. e. worm burden) than did the negro, and that the anemia produced by the disease was to a considerable degree responsible for the so-called "laziness" of the poor white folks of the South. Using the eggs passed in the stool as a criterion of infection and working for the most part through the schools, public health workers began systematic diagnosis and treatment of cases throughout the South. Thus in a single generation, by means of treatment, sanitary disposal of human feces and educational propaganda the great mass of clinical hookworm infection in our midst has been greatly reduced. How much remains in Louisiana is unkown but at least 5 per cent of the country population is infected. When the machinery and facilities are afforded, it would be a valuable public health project to determine the present-day distribution, incidence and burden of hookworm infection in this State.

In considering chemotherapeutic treatment of hookworm patients the first scienific tests were conducted on man, but the more recent, more efficient drugs were first carefully tried out on experimental animals before they were utilized for human therapeusis. Thymol and chloroform have been supplanted by carbon tetrachloride and tetrachlorethylene, as more efficient drugs, while supportive treatment, including transfusion, liver and iron therapy, are now recognized as important adjuvants in severe cases of hookworm disease.

Ascariasis. The large intestinal worm (*Ascaris lumbricoides*) was first found to be a common infection of children of the Southern States during the surveys made by the Hookworm Anemia Commission. The life cycle of the parasite and its migration through the mammalian body was worked out on the pig. It was not until the significance of this work was understood that the clinical importance of the lung stage of the infection was visualized. Its full implications are even today not common knowledge of the clinician. A scientific study of the epidemiology of *Ascaris* infection in the South was undertaken for the first time in 1928. Since that date intensive work has been carried out in Virginia, Kentucky, Tennessee, Mississippi, Arkansas, Florida and Louisiana (Cort 1931[7]; Otto, 1932[18]). It has been found that ascariasis exists most intensively in the hilly clay soil districts of the South, except for a focus in the sugar-cane district of Louisiana and another among the cigar-makers' families of Tampa, Florida. It is essentially a household and door-yard infection and involves primarily children under five years of age. All of these epidemiological findings are in contrast to those of hookworm disease, which is prevalent in sandy-humus soil on the coastal plains of the South Atlantic and Gulf States, and which is not a door-yard but a field problem. From a public health viewpoint the most significant epidemiological discovery in ascariasis is the continuous reinfection of children at play in sites polluted with promiscuous fecal droppings made by themselves or by other children in and around the door-yard. It is a hand-to-mouth infection in which viable embryonated eggs are picked up from the soil day by day, so that these children may have at one and the same time mature and immature worms in their small intestines, larvae just hatching from ingested eggs, as well as larvae migrating

through the circulation, lungs and upper respiratory tract into the alimentary tract.

Recently William Hugh Headlee (1935[15]) of my laboratory conducted an *Ascaris* survey in the metropolitan area of New Orleans. In a group of 10,990 individuals an average *Ascaris* infection incidence of 6.6 per cent was found, although in the preschool group the incidence was significantly higher. The family environments of *Ascaris* families showed *Ascaris pollution* of the door-yard in 75 per cent of the localities. Approximately half of the eggs recovered from the soil were already fully embryonated and ready for new infections. The high percentage of viable eggs throughout the entire year was found to be due to our favorable climate, which provides a maximum infection risk from a minimum soil pollution. Economic conditions, inadequate provisions for the disposal of excreta and ignorance of the way in which this infection is acquired, added considerably to the dissemination of the infection. Moreover, under such conditions, reinfection after anthelmintic medication is known to be a frequent occurrence.

Contrary to popular belief santonin is not a satisfactory anthelmintic for the eradication of *Ascaris* and should be replaced by more efficient, less toxic drugs, such as hexylresorcinol.

ARTHROPOD-TRANSMITTED DISEASES

Endemic Typhus. Within recent years no epidemic of typhus fever has been reported for the continental United States. During and immediately subsequent to the World War the study of this disease in Europe indicated that it is a rickettsial infection and that in epidemic form it is transmitted by the body louse, *Pediculus humanus,* var. *corporis*... Foci of endemicity have been known to exist in Europe, Asia, South America and Mexico. In the United States sporadic cases of a mild nature have been reported from time to time, usually under the name of Brill's disease. In the South they have been on the increase within the past decade and have appeared in practically every state from Maryland to Texas. Studies made by the U. S. Public Health Service indicate that today these sporadic cases are practically never louse-transmitted; that they rarely occur in more than one individual of a family, and that the mortality is low as compared with louse-borne epidemic typhus. There is both substantial epidemiological and experimental evidence to indicate that transmission of the infection in the Southern United States is ordinarily effected by the rat flea, that rats serve as the reservoir of the infection and that the murine form of the South is of Mexican extraction.

Introduced from famine-stricken Ireland and by American troops returning from Mexico, typhus fever was first definitely diagnosed in New Orleans in 1843 and 1844. The disease assumed epidemic proportions in 1847 and was a serious menace to the community for a period of seven years, during which time about 7,500 persons suffering from the disease were admitted to Charity Hospital, with about 18 per cent mortality. After this date the epidemic gradually subsided, although burial certificates for New Orleans gave typhus fever as the cause of death in from one to 46 cases almost every year from 1854 until 1880. Endemic typhus was first definitely diagnosed in New Orleans in 1929, with 20 cases and one death recorded from Charity Hospital through 1934*. Similar data from the state of Louisiana as a whole are not available for comparison. It is obvious that at the present time endemic typhus is not the public health problem in Louisiana which it has become in Georgia, where several hundred cases are diagnosed each year from Atlanta and from the Southern portion of that state. Sufficient evidence is now available, however, to justify rat-extermination campaigns throughout this State as a means of control of this disease, just as the same procedure is utilized to keep bubonic plague out of the port of New Orleans.

Dengue and Yellow Fever. While these diseases are entirely separate clinical entities, they are grouped together because the virus of each is a filter-passer and because both are commonly transmitted by the same mosquito, *Aedes aegypti,* the *"Stegomyia"* of yellow-fever days. All of us are more or less familiar with

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the terrible epidemics of yellow fever which visited the Eastern and Southern States during the 18th and 19th centuries, usually brought by boats arriving in our ports from Cuba, Jamaica, Central or South America. We are familiar with the scourge which visited our soldiers in Cuba during the Spanish-American War and with the work of the Yellow Fever Commission, whose proof that the *"Stegomyia"* mosquito was the transmitter of the dread disease, made it possible to stamp out the infection in Cuba and later in Panama. The last epidemic of yellow fever in the United States, which occurred in New Orleans in 1905, was quickly brought under control by health authorities who cleaned up the breeding places of the *"Stegomyia"* and summarily prevented further human infection. Since there are still extensive foci of mild infection in northern South America, U. S. Public Health Service officers scrutinize all ships entering our ports from these endemic foci and also examine with great care the clipper airplanes landing at Miami and Brownsville, Texas. The epidemic of yellow fever in Rio de Janeiro in 1929-1930 indicated the latent danger of such endemic foci. Unfortunately the care exercised today in preventing the introduction of the disease into the country has not been paralleled by comparable "anti-*Stegomyia*" campaigns. In New Orleans, Biloxi, Mobile and other Southern ports the suitable mosquito breeds in large numbers throughout practically the entire year, so that a single suitable human case of yellow fever introduced into any of our Southern ports would provide the potential link in the chain for another epidemic.

Mention has been made that dengue or "break-bone" fever is also transmitted by the yellow-fever mosquito. A mild epidemic occurred in New Orleans and Baton Rouge early in 1922. The epidemic of dengue during the summer and fall of 1934 in Miami, Florida constitutes ample proof of the danger of allowing this mosquito to breed. Although dengue is endemic in the South, within the past decade only isolated sporadic cases were reported until July, 1934, when it was estimated that 1,000 cases had suddenly developed in or near Miami. Within a month at least 6,000 cases had developed and the infection had reached Jacksonville. By September the disease was getting under control in Florida but was beginning to spread into Georgia, where several thousand cases were reported in September, October and November, and into Alabama, where more than a thousand cases developed in October and November. The advent of cold weather throughout the involved areas late in November suddenly terminated the epidemic proportions of the disease, which would otherwise have spread radially throughout the entire South. Had the virus been that of yellow fever instead of dengue, thousands of deaths would probably have occurred. I am convinced that the practically uncontrolled breeding of *Aedes aegypti,* the yellow fever—and dengue-transmitting mosquito, in our midst*, with only infrequent, desultory attempts to reduce its numbers, will some day provide a medium for another epidemic scourge of yellow fever, which may reach the proportions of that of 1878, since our present-day population consists for the most part of non-immune individuals.

DISCUSSION AND CONCLUSIONS

The information presented in this paper has consisted of only a few examples taken from the field of parasitic infections illustrating the basic service which has been rendered the public health worker in providing a sound foundation for the prevention of both endemic and epidemic diseases in our midst. Similar instances might readily be cited from the field of bacteriology. It must be remembered, however, that such basic information, even when available for practical use, can not of itself prevent disease. It must have the moral and financial backing of our legislature, our State Department of Health and the support of every physician in Louisiana. Furthermore, it must be "sold" to the people by every legitimate method of educational propaganda, but particularly through the schools. As a distinguished British medical officer has remarked, "New wine of sanitation can not be poured into the

***Except for the month of February this mosquito has been found breeding throughout the year in several New Orleans cemeteries. (Hinman, 1931).**

old bottles of antiquated customs and ideas". Disease-prevention can not be accomplished either by theorizing or by police-power, but requires the willing cooperation of the people themselves. A knowledge of the elementary principles of disease, together with the more important agents of infection and their means of transmission, should be taught to every grade, high-school and college student in our state. Every person should be familiar with the sources of infection of our more common diseases, just as were the communities in which the Hookworm Anemia Commission worked two decades ago and as the citizens of New Orleans were at that time of the 1905 yellow fever epidemic. The agents of disease wage an unremitting fight against us. We can only fight back by an intelligent understanding of these organisms, their habits and the practical methods for their control and eradication.

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DISCUSSION

Dr. G. F. Fasting (New Orleans): Dr. Faust's standing in the field of parasitology should be so well known that whatever information and comments he provides us must command our attention.

I have endeavored to obtain data that would refute or minimize his statistical report, but I have failed.

Malaria apparently shows no decrease. We still have over 70,000 estimated cases in Louisiana. But why must we go on relying on estimated cases, and have no better criterion than 200 cases for each reported death, assuming that even at death the diagnosis has been correctly made?

Why should we have an estimated 200,000 individuals with amebiasis, and only have as a basis a survey on patients arriving at Charity Hospital?

Hookworm is supposedly with us and is estimated at five per cent of the country population.

How startling to learn of ascariasis in 6.6 per cent of 11,000 individuals, and that the incidence was highest in the pre-school group. The infection results from pollution of house yards, and the New Orleans survey revealed infestation in 75 per cent of premises examined. Quaint and old New Orleans is advertised to the tourist. We pride ourselves on our water supply and port facilities. It might be interesting to know what connection exists between the heavy ascariasis infestation, refuse accumulation, garbage on our streets, and ditches which pass for street gutters.

With regard to dengue fever, Dr. Faust has correctly brought us face to face with a most serious situation in the Southeast during 1934. How impressed are we really about the ever present *Stegomyia* and *Aedes aegypti* mosquito in our state? I would like to make it a matter of record that in the year 1936 we have been warned of the dengue fever danger, and that some day soon we may be called upon to share our responsibilities for inaction.

It seems to me Dr. Faust has left out one item of importance. I should appreciate his telling us how the state of Louisiana ranks in the diseases listed when compared to other Southern states.

Can it be that we are at the bottom of the list? If so, I appreciate Dr. Faust's treating us so kindly, yet the issue must be met.

The findings, as reported, turn our attention to the machinery the public has provided for prevention of disease. Of what is the machinery composed? The State Board of Health, Parish and City Health Officers, Parish Health units, and the State Board of Education. I have no justified criticism to make against any of these departments. I sincerely believe they have carried out their mandate to the extent the legislature has permitted them to do so by laws and appropriations.

However, I have a definite impression that the coordination of activities can be improved, and that very much more can be accomplished by the existing agencies, provided this Society, through a thoroughly active standing committee, devotes itself to the health program of the state.

Dr. Faust has called our attention to peculiar difficulties inherent in our population, but he also states, "carelessness in reporting, inadequate training, lack of experience, unwillingness to examine smears." Dr. Faust does not openly state who is here at fault. Am I right in inferring he means the physicians of the state?

I am not familiar enough to judge this latter point, but I have noted in the Quarterly Bulletin of the Louisiana State Board of Health the meager number of laboratory examinations for malaria and intestinal parasites. The state has provided five laboratories for diagnostic work. Yet their convenience is only appreciated in different diseases.

If it can be established that there actually exists among numerous physicians a state of mind refractory to improving diagnosis, or to avail themselves of what the public provides in self interest for protection, we shall need the advice of a psychiatrist and psychoanalyst before we solicit the physicians to help in preventive medicine.

Dr. Faust wants students and children taught the principles of disease, their means of transmission, to have the information "sold" by education to the school. We are doing much of that now, but what share has the state medical society in this?

Suppose we teach all the children the principles which we claim to know. May we not anticipate that a few years hence, when these children join their votes as a power in their communities, they then will say, "Well, why didn't you fellows, who knew all these things, who have the power to vote, influence your parish officials and legislature, do your individual jobs better and in your wisdom create a coordinated plan for prevention and control of epidemic and parasitic diseases?"

Speaking symbolically, we have a machine now, very much like an automobile. The engine is running ("idling," as the mechanic says), but where is the intelligence behind the wheel to give it the best direction and give the speed for maximum and economical performance? Isn't this the function of the Louisiana State Medical Society?

PHYSICAL DEFECTS OF CHILDREN OF PRE-SCHOOL AND SCHOOL AGE*

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In the preparation of this paper a review of the annual reports of the Louisiana State Board of Health, Bureau of Parish Health Administration, for the years 1932-1935, inclusive, have served as the basis for the consideration of the defects of children of school age. I wish to express my appreciation to Dr. Todd, Director of the Louisiana Bureau of Parish Health Administration and his staff for their courtesy and cooperation in the furnishing of relevant data.

The annual report of the Louisiana State Board of Health, Bureau of Parish Health Administration, for the year 1932 shows that 66,494 school children were examined and that 48,545 were "found defective" and that the defects found totaled 95,924.

For the year 1933, 65,526 school children examinations revealed 47,522 as "found defective" and 101,544 defects were found in that number.

In the year 1934, 66,654 school children were examined; 46,350 being "found defective" while the number of "defects found" numbered 4,411, the smaller number evidently being due to a change of classification.

In other words over 73 per cent of the Louisiana children examined in 1932 were classified as "found defective"; in 1933, over 72 per cent and in 1934 over 69.5 per cent.

For the years 1932-1934, inclusive, no mention is made of the character of the "defects

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found." The report for the year 1935 is more complete and specifies these defects and classifies them as "major and minor" and lists the number of cases corrected.

Diseases of the tonsils, adenoids and teeth appear as the most common defects in the 1935 Louisiana school child. When one considers the number of cases of rheumatic carditis, nephritis, chorea, and so on, found in hospital and private pediatric practice, and which are directly attributable to these foci of infection, it is certainly encouraging to find that these defects have been pointed out to the parents and that a moderate number have been classified as "corrected."

The under or overweight child (10 per cent) without organic disease, occupies a prominent place in the defects enumerated. The nutritional defects, which include obesity, undernourishment, goitre and pellagra, appear to a lesser extent.

Disturbances of vision and hearing have been commonly met with in this 1935 report and a comparatively high percentage of the defects of vision are noted as corrected.

Only a very few cases of childhood tuberculosis are recorded. It is very evident, therefore, that only the marked cases have been classified. Cardiac lesions are recorded more frequently.

Skin diseases, (parasitic and infectious) malaria, including carriers, and hookworm, are noted with a relatively high percentage of correction.

Mental conditions appear infrequently and postural defects as well as the other orthopedic conditions, were not found in this report.

In this decade, we have seen the advent of the "pre-school round-up." These so-called round-ups have been sponsored by the various parent and teacher organizations and conducted by the physicians of the particular community. Their purpose is to point out to the parents the defects present in their child and the immunizations necessary before the child enters school. In order to eliminate abuse, these "round-ups" should be under the strict supervision of each parish or county medical society. Properly handled, a great deal of good can be accomplished with ultimate hope that every child will be physically prepared for entrance into school.

As to the pre-school child, let us first consider him emerging from infancy. Finding the strict supervision of mother or nurse relaxing, he is thrown more on his own resources, while in the first year of life he was taken to a physician for a periodic check-up, and now the physician sees him only during severe acute illnesses. Thus, the pre-school child exposed by greater contacts and changes in temperature, is very subject to the communicable diseases, respiratory infections and to acute conditions of the throat, mucous membrances, and skin. Digestive disturbances are common and bad nutritional habits are formed in this period. Is it, therefore, surprising that 70 per cent of the school children are found defective?

During the past thirty years, the public has gradually become educated to the necessity of "keeping the well baby well." By better prenatal care and the cooperation of parents and physician in handling the infant, the mortality for this period has been sharply reduced.

By more attention being concentrated on the health of school children, the public is gradually becoming conscious of their responsibility to the school child. If reduction in the defects of school children is to be accomplished to an appreciable extent, however, the results will be obtained only by better care and supervision of the pre-school child.

It is very evident that each year the general welfare of the school child is improved. Better school facilities, the issuance of free school books, the immunizations carried out, and the splendid work of the various parish health units have brought about a decided improvement in the school child of this state.

Lucas has stated that only 12 per cent of the population of the United States use public health agencies. The responsibility for the handling of the child thus rests upon the individual physician. He should, therefore, realize his importance as the principal unit in better community health.

In conclusion, I wish to plead for a better understanding between the various health agencies and the individual physician. By their united efforts and the education of parents in having periodic examinations of the pre-school

child, let us hope that the large percentage of physically defective Louisiana School children of the 1932-1935 period will be materially reduced in the next few years.

CONGENITAL HEART DISEASE

WITH PRESENTATION OF CASE AND PATHOLOGIC SPECIMENS*

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No clinician of moderate or wide experience has failed to recognize that sometimes it is impossible to establish the diagnosis of congenital heart diease in a newborn, simply because the classical symptoms of the condition may not manifest themselves until the period of late childhood. Clubbing of the fingers rarely occurs before the age of two or three years; dyspnea is frequently not evident until the child begins to crawl or walk; while cyanosis often does not appear until the child begins to indulge in efforts of the runabout.

Though the presence of pallor, cyanosis or limpness in a newborn should direct attention to the possibility of a cardiac condition, one should not lose sight of the fact that these same manifestations may be due to any one of the following widely different conditions, namely:

(1) Primary heart failure, where one finds a newborn presenting rapid respirations and pulse, cyanosis or pallor and no other finding to aid in the diagnosis.

(2) Afebrile bronchopneumonia presenting no other signs except those described above.

(3) Atelectasis.

(4) Cerebral hemorrhage.

(5) Suprarenal hemorrhage or other internal hemorrhage.

(6) Septicemia.

Turning to the matter of physical examination one must remember that an audible murmur may be absent even in severe malformations, while a soft systolic murmur often may be present during the first two or three months of life in infants who never show subsequent evidence of cardiac malformation. To emphasize the thought the writer wishes to bring out, the following practical experience is recounted. Recently in the Charity Hospital of New Orleans autopsies were performed on two infants on the same day. One had died on its fourth day and one on its fifth. Both had shown before death refusal to nurse, lack of muscle tone, and pallor with no other physical signs to aid in the diagnosis except crepitant rales in the right lung of the former. At autopsy it was found one had died of bronchopneumonia, and the other from otitis media and early peritonitis. There was probably septicemia, though no blood culture was made. The first of these had been diagnosed as probable bronchopneumonia and the second as probable congenital heart disease.

In the differentiation of these cases an x-ray of the chest might help to distinguish between heart failure, bronchopneumonia, and atelectasis; a spinal puncture might clarify the diagnosis of cerebral hemorrhage; a coagulation and bleeding time of the blood might help to differentiate internal hemorrhage; while a blood culture would give knowledge concerning septicemia.

Granting that a diagnosis of congenital heart disease has been made, it is often impossible to establish the exact anatomical lesion present. While the exact diagnosis is of great interest to the physician the prognosis is of greater concern for the parents, and fortunately this prognosis may be made with a fair degree of accuracy by observing the response the child makes to the usual reactions of normal life in spite of its handicap. If it thrives poorly, continues thin and under-nourished, although receiving proper care and diet; if it shows fatigue easily and has little resistance to infection; then the prognosis is bad regardless of what the anatomical diagnosis may be.

In order to evaluate properly the status of any case of congenital cardiac defect it is of great value to understand the processes of its development. Congenital heart disease may be caused by an endocarditis due to some intra-

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uterine infection or it may be due to syphilis, but more often it is due to maldevelopment of the heart itself. Most malformation of the heart may be explained by Spitzer's[1] theory of the development of the human heart.

I have thought it quite profitable to quote Shapiro's[2] condensation of this theory in an article appearing in the Archives of Pathology in 1930. "In lung breathing animals the basis of cardiac development is the division of the organ into a double heart. In gill breathing aquatic animals, the heart is single, with respiratory and systemic parts lined up one behind the other and with the septums transverse to the stream. Terrestial life and lung breathing bring a requirement for greater systemic energy and for an even far greater respiratory energy. The whole heart grows even beyond its original limits. It must, therefore, bend.

"This increase in development is not uniform. The relatively greater respiratory energy required with lung breathing gives a relatively greater development to the pulmonary part of the cardiac tube. As it begins to compare with the systemic part it lines up beside the latter, so that the two parts, instead of being one behind the other, are side by side. The tranverse septums melt under the increased flow of blood. At first the systemic force is so much greater than the pulmonic that the two streams partly mix and septal development between the two parts is impaired. Such are the conditions of the incompletely divided hearts of amphibians and reptiles. With the relatively greater pulmonic development in mammals the force of the pulmonic blood approaches that of the systemic. The streams no longer admix. Where they flow by each other the pressure is least, and longitudinal septa are allowed to develop. Where other factors disturb equlization of pressure, septal defects develop.

"The right side of the heart is separate from the left. Were it a simple division one side would be completely cut off from the other. Blood to the right side would be aerated by the lungs and go in an endless cycle directly back to the right side. Blood to the left side of the heart would course through systemic channels and return unaerated to the left side with no exchange. Therefore, there must take place a complete 180 degree torsion of the arterial end so that the aerated blood in the pulmonic system may get to the left side of the heart and be discharged from it.

"That such a rotation occurs is seen in the clockwise spiral of the aorto-pulmonary septum. Thus in the definitive heart, as the pulmonic heart trunk descends it swings from behind the aorta around to the left and anterior, reversing, approximately, its distal relation to the aortic trunk. In the phylogenetic development of the human heart the pulmonic system undergoes more changes than the aortic, consequently, we find more development defects in the right side of the heart than in the left."

It is generally accepted that this changing of the heart of the embryo from the unpaired tube into the human heart with its four chambers and well developed pulmonic and systemic systems takes place between the fifth and eighth week of intrauterine development. After the eighth week the heart has the shape and all the parts of the fully developed organ. Any defects in the septa or in the positions of the great vessels must be due to some disturbance in the development of the embryo in the first eight weeks of pregnancy.

We have collected at the Southern Baptist Hospital some specimens of abnormal hearts exhibiting certain of these classical anomalies. Dr. Lawson, who performed the autopsies, has kindly consented to demonstrate two of these hearts and to open the discussion of this presentation.

The first specimen he will show is from a child who died at six months of age. It has a completely transposed aorta and pulmonary artery and a patent auricular septum. According to the theory of Spitzer this heart exhibits a complete lack of rotation of the aortic stem, the aorta remaining on the right side and the pulmonary artery coming from the left ventricle. Without the patent septum life could not have been maintained even for the six months. This patient presented from the first few days of life, pallor with occasional attacks of cyanosis, and dyspnea so severe that it had to be tube fed at all times. The heart was of normal size and had no murmurs nor thrills. A systolic

murmur appeared, however, at the age of four months and remained constantly present. The Wassermann was negative. The family history was negative for other cases of heart abnormalities.

The second specimen he will demonstrate shows grave septal defects. This patient lived six months. The outstanding manifestations were pallor, undernourishment and frequent attacks of cyanosis. No murmurs nor thrills were ever perceived. The blood Wassermann gave a four plus reaction. No anatomical diagnosis was made in either of the above cases before the autopsies.

Having stressed the difficulties of diagnosis by physical signs alone, I will give histories of three cases, in two of which we have, with the aid of electrocardiograms and roentgen rays, made tentative diagnoses. In the third we have not ventured to make one even with these aids.

CASE HISTORIES

The first was seen when he was four months old. At that time he was a well nourished, active infant showing no dyspnea and no cyanosis. Physical examination revealed a loud systolic murmur heard over the whole chest, front and back, but best heard in the third interspace just to the left of the sternum. No other abnormal sounds were heard. The heart was not enlarged and there were no thrills. The electrocardiogram and x-ray were normal. The child is now one year old, in normal health. He never exhibits cyanosis nor dyspnea. I have diagnosed this as patent interventricular septum. The prognosis is good, but a lesion at this site is liable to become the seat of vegetations if the child has infectious diseases.

Patient number two seemed normal until he had an attack of cyanosis lasting several minutes when he was five days old. Physical examination revealed no abnormal heart sounds. X-ray showed heart and thymus not enlarged, and lungs well aerated. There were no twitchings nor convulsions. A diagnosis of congenital heart disease was made with no attempt to classify the lesion anatomically. The child continued to have occasional attacks of cyanosis until he was five months old. Since that time he has been permanently cyanotic and dyspneic on the least exertion. He has had a systolic heart murmur at the base most of the time since he was six months old, but it is not always present. His fingers, toes and even his nose, began to exhibit clubbing when he was about eight months old.

The roentgenogram of his chest at fifteen months presents a heart with the typical coeur-en-sabot shape which we see in cases of right ventricular enlargement associated with pulmonic stenosis. You will note in the second film on the board that the heart is the shape of a boot and where the pulmonary arc should be there is a retraction. The electrocardiogram made at this time indicates extreme right ventricular preponderance.

His blood count is as follows: red cells 9,610,000; white cells 9,250; hemoglobin 107 per cent; neutrophils 30 per cent; lymphocytes 54½ per cent; eosinophils 12 per cent; monocytes 3½ per cent; polychromatophilia four plus; nucleated red cells 2½.

From the x-ray, the electrocardiogram and from the early and constant cyanosis we have diagnosed this as "tetralogy of Fallot," with its pulmonic stenosis, enlargement of right ventricle, patent ventricular septum, and partially transposed aorta. In this case we have a heart where there was only partial rotation of the embryonic aortic stem, and a defect in septal development. The prognosis for reaching adult life is doubtful. We base our opinion on his increasing cyanosis and dyspnea and on his blood count.

Case three was seen first at five months. At that time she was pale and undernourished and exhibited marked pallor and dyspnea. Her heart was enlarged to the right and the left. No thrills were palpable. A loud systolic murmur was heard over the whole chest and transmitted to the vessels of the neck. The pulmonic second sound was loud and snapping. She is now four years old, shows very little signs of clubbing, but has increasing dyspnea and frequent attacks of cyanosis with cardiac pains. She usually falls at these times and cries out, holding her hand over heart. We have not been able to say what the anatomical abnormality is in this case. Dr. Ashman, from the Louisiana State University Cardiac Clinic, has consented to show the electrocardiograms of these cases and to discuss them.

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DISCUSSION

Dr. E. H. Lawson (New Orleans): From a survey of the current literature, it is apparent that congenital heart disease is being more easily recognized today than previously. In the classical work on the subject by Dr. Maude Abbott appearing in Osler's "Medicine" of the year 1925, 850 cases on the subject, collected to date, are reviewed. In the March issue of the American Journal of Pathology, 1935, there are two cases of congenital heart defect, and of the five cases presented by Dr. Crawford two are taken from a series of

four obtained during a period of the last ten years, in a series of seventy autopsies of infants and children under six years of age, occurring at the Southern Baptist Hospital, New Orleans. Intraventricular defect, which is the most prominent in the first case mentioned by Dr. Crawford, occurred in 225 of Dr. Abbott's series. A total absence of the intra-auricular septum, which presents a heart with three chambers and which occurs in the second case presented in the essay, occurs in only four of the 850 cases of that series.

The first photograph is that of intraventricular defect and dextroposition of the aorta in the heart of a six months old infant, reported by Dr. Crawford. The second view of the left side of the heart with the intraventricular defect shows the position of the pulmonary artery, demonstated by the location of the probe. With the assistance of Dr. Joe T. Roberts of the Department of Anatomy at Tulane, a diagram showing the circulation in this particular heart is presented. It will be noticed that only a small amount of blood passing through the opening in the intraventricular septum becomes aerated. This explains the cyanosis and dyspnea of this patient. It has been shown by Lundsgaard that visible cyanosis from a right to left shunt does not occur unless at least one third of the venous blood is thrown into the arterial stream. Such a condition evidently exists in this heart where more than one third is thrown into the arterial stream.

The next photograph illustrates the condition known as cor triloculare ventricular, and is the second case presented by Dr. Crawford. In this condition there is only one atrium, the intra-atrial septum having failed to develop. In this photograph may be seen the one auricle and the one opening between this auricle and the two ventricles.

The next photograph shows another view of the same heart in which may be seen the intraventricular defect, with the cordi tendoni of the valves of one side passing through the defect in the septum and attaching themselves to the musculature of the opposite side. In a diagram of the circulation in this heart it will be noticed that the blood from both the pulmonary vein and the vena cava becomes mixed in the common atrium. It is then divided and a part passes to the left ventricle and a part to the right ventricle, but in the defect of the intraventricular septum and the over-riding of this septum by the aorta the blood again becomes mixed and a part passes through the aorta and a part through the pulmonary artery. It may thus be seen that a large portion of the venous blood becomes shunted through the peripheral circulation, producing cyanosis, as mentioned in the discussion of the previous case.

From the essay and the discussion it may be seen that the field on congenital malformation of the heart is very large, extending from a simple patency of the foramen ovale, which is fairly common, to the rare condition of the persistent truncus arteriosis, which is extremely uncommon. The defects may be single or multiple and the diagnosis of such conditions still remains a problem.

Dr. Cecil O. Lorio (Baton Rouge): Just a word in confirmation of what Dr. Crawford has brought out in her most complete paper.

All of us who are interested in children run into these cardiac malformations. We as physicians are interested in the type of malformation present, but, as Dr. Crawford has stated, the patient or the patient's parents are not interested in it, and we as diagnosticians should not pat ourselves on the shoulder because we can make the diagnosis of congenital heart disease, but we should pat ourselves for the ability to tell if the child is going to live a normal life.

I think in the child, just as Dr. Crawford stated, we will have to depend entirely on the functional test, as you do in adults.

Dr. Williard R. Wirth: (New Orleans). There are four groups of congenital heart disease. The distinction must be made however, between congenital heart disease and the presence of congenital abnormalities, because when we use the term congenital heart disease we should mean that the individual has a congenital abnormality which is causing signs of distress as disturbed circulation. On the other hand, there may be abnormalities present not sufficient to produce disturbed circulation, therefore no symptoms or signs. These defects may be sufficient to be recognized and cause disturbance at any one of several periods. They may occur intra-uterine during the fetal life and the circulation be insufficient at that time so as to produce a miscarriage; or they may be recognized by the production of inadequate circulation in the early weeks of delivery, because of the adjustment that must be made extra-uterine the circulation is then inadequate. They may be recognized early in infancy, the first two or three years of life, and another group which may only be recognized during adolescence or early youth.

It all depends, as Dr. Crawford said, upon the requirements that are placed upon the heart and whether or not the defects present are sufficient to cause the registration of embarrassment by these requirements placed on the heart. The signs and symptoms may not be observed until any one of these three extra-uterine periods, and the diagnosis is in proportion.

If a murmur is present without any other signs, it is difficult to know if it is a congenital defect or not.

Another thing is the difficulty in making the exact anatomical diagnosis in these cases. Most of us are hard put and can only say it is a case of congenital heart disease, one difficulty being that these defects occur in groups; there are

multiple defects instead of single defects and the signs and symptoms are very confusing.

Dr. Rena Crawford (In conclusion): I should like to thank the men for discussing the paper and bringing out interesting points, and then I wish to demonstrate the roentgenogram of the chest of the second case I reported. The report on this film was "Heart not enlarged, thymus normal size, lungs well aerated." If you will notice you will see that the heart is a typical "coeur-en-sabot" shape, denoting a right side enlargement. The enlargment of the right side has caused a partial rotation of the heart so that we may see two apices the one of the right ventricle and one of the left which has been slightly elevated by the encroaching right ventricle. This roentgen ray was taken when the child was five days old. Here is a roentgen ray of the same chest when the child was fifteen months old in which we see the same "coeur-en-sabot" shape.

This third film is the roentgenogram of the chest of the third case reported in the paper. It shows a general enlargement of the whole heart. This same enlargement was shown in a roentgen ray made when the child was five months old.

SOME PRINCIPLES IN THE TREATMENT OF FRACTURES OF THE FOREARM*

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The fundamentals of treatment of any fracture can be no better described than by the old rule of the four "R's"; namely, recognition, reduction, retention and rehabilitation. The purpose of this paper is not to discuss recognition; this is only too well known by the medical profession and long ago was made comparatively easy by modern radiographic methods. The author, however, feels that because of the difficulties in obtaining position and of maintaining the position obtained, reduction and retention in fractures of the forearm could well be reviewed.

Reduction of displaced fragments of any fracture is by traction and counter-traction. This reduction can be immediate and in its simplest form can be accomplished by manual manipulation with some form of anesthesia, either local or general, to secure complete relaxation of muscle spasm. Reduction can likewise be obtained by a prolonged method of weights and pulleys or some substitute for the traction of the weight and pulley method. The first form of reduction, namely, immediate, is much to be preferred in treating fractures of the forearm and it is only in cases of compound fractures or cases of marked comminution that weight and pulley should be considered. To apply correctly immediate traction and counter-traction, it is necessary to understand the muscle actions in the forearm and their relations to the bones with which we are dealing.

It therefore must be recalled that we are dealing with two bones; namely, the ulna and the radius. The ulna can be considered a continuation downward of the humerus, with the radius a continuation upward of the hand. These two bones are held firmly together by a dense fibrous band of tissue called the interosseous ligament. The ulna is the fixed bone, it moves only at the elbow joint in the motions of flexion and extension of this joint. The radius is the movable bone, it rotates around the ulna in the motions of pronation and supination of the forearm. Pronation and supination of the forearm occur at the upper and at the lower radio-ulnar articulations.

The muscles which influence these movements are not numerous, but their intricate pulls make the situation comparatively complex because of the positions into which the forearm moves; namely, elbow flexion and extension and true forearm pronation and supination. Muscle spasm accompanies all fractures with displacement. Muscle spasm is nature's attempt at splinting. It is an attempt by muscle contraction to immobilize or fix the broken bone ends so as to prevent further pain. It must also be remembered that the muscle contraction usually controls and fixes the proximal fragment and any attempt at reduction must aim to place the distal fragment in alignment and position

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with the proximal fragment which is held firmly by the altered muscle pull.

FRACTURES OF THE OLECRANON PROCESS

The triceps muscle is attached to the olecranon process and is the muscle which pulls the forearm into extension. A fracture of the olecranon process is naturally associated with displacement of the proximal fragment upwards by a contraction of the triceps muscle. Reduction of this fracture is by elbow extension and in this manner a fair percentage of the olecranon fractures can be satisfactorily treated. A moulded plaster of paris splint holding the elbow in this position is easily made and the general care after position has been obtained is the same as in treating any type of fracture. When this position of extension does not give satisfactory reduction, an open operation with wiring or tying of the fragments is necessary and should be done without undue delay.

FRACTURES OF THE RADIAL HEAD

Fractures of the radial head are very disabling because of the interference with forearm pronation and supination. These motions occur at the upper and lower radio-ulnar articulations, and since the radial head is the major factor in the upper articulation, it results in marked interference with this motion when the fracture occurs in this area. This type of fracture should be reduced early and as completely as possible. Reduction can often be accomplished by finger pressure and can be maintained after once accomplished by a moulded plaster of paris splint which will hold the arm and forearm in a position of elbow flexion. When it is impossible to obtain reduction, it is often necessary to do an open operation, in which instance, it is better to remove the fractured radial head than to attempt reduction. Removal of the head does not cause disability.

FRACTURES OF THE UPPER FOREARM

In dealing with fractures in this region it is imperative that the positions of pronation and supination be considered. In the position of supination, both ulna and radius are widely separated. In the neutral position or the mid pronation-supination position which is halfway between pronation and supination, these bones are farthest apart. In the position of pronation, on the other hand, these bones are almost in contact with each other. It is therefore logical that fractures of the forearm should never be placed in the position of pronation, because the closeness of these two bones favors fusion. This bony union called synostosis, would lead to permanent disability by preventing motion of the forearm. The biceps muscle attached to the radius at the radial tuberosity is the chief flexor muscle of the elbow; it is likewise a strong supinator muscle. The supinator brevis muscle attached to the outer surface of the radius at its upper third aids markedly in the action of supination of the forearm. The supinating action of the biceps muscle and the supinator brevis muscle is neutralized only by the pronator teres muscle which is inserted into the radius at a point corresponding to the junction of the middle and upper thirds, which is below the attachments of the supinator brevis muscle. From this it is evident that any fracture of the radius alone or of the radius and ulna together occurring in the upper third of the forearm, results in a position of marked supination of the proximal radial fragment. To obtain and maintain reduction, it is therefore necessary to align the distal with the proximal fragment. This can be done only by placing the entire forearm in the position of complete supination with the elbow flexed to a right angle. This position can be comfortably maintained by using anterior and posterior moulded plaster of paris splints which include the lower arm, the forearm and the hand.

Fractures of the radius alone or the radius and ulna together occurring below the insertion of the pronator teres muscle, which is the neutralizing muscle in this area, result in a proximal fragment which is influenced by this muscle. The proximal fragment is no longer in the position of extreme supination as described above but because of the influence of the pronator teres muscle, this fragment is in the neutral or mid-pronation supination position. Consequently, this type of fracture must be reduced and

maintained by keeping the forearm in the position of mid-pronation supination.

FRACTURES OF BOTH BONES OF THE FOREARM

Fractures of both bones of the forearm occur fairly frequently in children and are usually found in the lower two-thirds of the forearm. They are often of the green-stick variety without marked displacement but with extreme angulation of the fragments. Where displacement occurs, it is very difficult to reduce both bones unless one forgets that he is dealing with two bones and treats the reduction as if one bone were present. Manual reduction, using traction and counter-traction, then extension to engage the bony ends and finally flexion to a straight line often gives satisfactory position.

The modern shock-proof portable x-ray units with their daylight fluoroscopic screens which can be attached to the head of the operator, allowing him the use of both hands, are an excellent adjunct in reducing this type of fracture and very often are a deciding factor between an open and a closed reduction. Reduction is best maintained by applying a sugar tong moulded plaster of paris splint with the forearm in a neutral position and the elbow flexed to a right angle. Open reduction of this type of fracture is occasionally necessary when other methods have failed.

FRACTURES OF THE LOWER FOREARM

The most frequent disabling fracture of the human skeleton is the Colles fracture. A Colles fracture is a fracture of the lower end of the radius with or without a fracture of the styloid process of the ulna. Colles fracture results from indirect force and is usually caused by a fall on the outstretched hand. During the early days of the automobile when self-starters and gasoline engines were not perfected, necessitating cranking of motor cars, this type of fracture was more often seen and was often referred to as a Ford fracture. In this fracture there is a posterior or dorsal displacement of the distal fragment, usually with a deviation of the hand to the radial side because of the loss of support on that side. This fracture clinically presents the typical silver fork deformity. No special group of muscles influence the deformity, the flexor and extensor muscles of the wrist, hand and fingers retain the displacement and the loss of bony substance by compression dorsally or the line of fracture favors a ready redisplacement if the correct position is not maintained after reduction. The reduction of the Colles fracture is simple. Under anesthesia, either general or local, by means of traction and counter-traction, extension to engage the ends and finally flexion of the wrist, associated with ulnar deviation and pressure on the fragment ends by the thumbs of the operator, a ready reduction is accomplished. The fracture is invariably reduced to a complete anatomical position. When reduction is once obtained, it is necessary to maintain the position of wrist flexion and ulnar deviation so as to prevent redisplacement. This position is known as the Cotton-Loder position and fixation is best accomplished by applying anterior and posterior moulded plaster of paris splints. Wooden splints are thoroughly inefficient; first because of their inability to obtain this position and secondly, because they loosen too easily and consequently do not maintain any position.

The forearm now held in the Cotton-Loder position is carried in a sling and circulation of the fingers is observed. Any interference with the circulation should cause an immediate removal of the fixation. Circulatory interference in the forearm can cause Volkmann's ischemic paralysis. Volkmann ischemic paralysis is a grotesque permanent disability and all precautions should be taken to prevent its occurrence. At the end of two weeks, in the average individual, the author has followed the routine of removing both splints without anesthesia. The wrist is now brought into a straight line and with no traumatism or jarring, anterior and posterior moulded plaster of paris splints are applied holding the forearm and hand in this position. One week later both splints are removed. The posterior splint is permanently discarded. The palmar splint is padded, using a piece of cotton felt held into

the splint by adhesive plaster. The splint is replaced and is held in position by the use of an ace bandage. The cotton felt forces the wrist into extension. If desired, from this point, the patient can be seen every day or every other day by the physician. Infrared therapy can be applied, massage used and the splint replaced with additional pieces of felt added to obtain the desired cock-up position of the wrist. If patients are intelligent, or where it is impossible for the patient to go to the physician's office frequently, hot and cold soakings, using buckets, one with very hot water, the other with cold water (ice being added if necessary) can be ordered daily. The splint is removed, the forearm and hand is immersed into the hot water for five minutes and then into the cold water for two minutes. It is replaced in the hot water for another five minutes, back into the cold water for two minutes and for a third time alternating with the hot and cold. While the hand is in the water, the patient can move the fingers and wrist actively. After the last cold immersion, a light alcohol massage can be used and the splint replaced using the ace bandage each time. At the end of five or six weeks in the average patient, the anterior splint may be discarded and light work may be resumed. In older patients, it may be necessary to continue fixation for a period of several additional weeks. Occasionally, it occurs that circulatory balance does not return with the removal of the splint at the end of the five or six weeks and the author has found that the mere application of the ace bandage without splinting acts very satisfactorily.

The complete treatment of Colles fracture has been described because of the bad cosmetic and functional results which are often seen after its treatment. It is the author's opinion that in this section of the country these bad results are probably caused by lack of proper fixation in the proper position to maintain reduction. The moulded plaster of paris splint and the Cotton-Loder position of wrist flexion and ulnar deviation cannot be too emphatically stressed. If more consideration is given to the treatment of this fracture, I am quite certain that the statement of Mr. Harry Platt, orthopedic surgeon of Manchtser, England, can easily be the mecca for all Colles fractures. Mr. Platt stated "that it should be possible to guarantee to all patients with a Colles fracture a well nigh perfect anatomical and functional result."

DISCUSSION

Dr. E. S. Hatch (New Orleans): First, I want to say that this demonstration has been a very admirable one. It shows up the condition exactly as we see it.

The changes I would like to suggest are these: I saw a patient who had been treated by a general surgeon about three weeks—a foot-ball player. His right elbow was in a position of right angles, and examination showed the olecranon process of the ulna had been fractured. Skiagraphs proved this, and, of course, it should have been put up as Dr. Simon has explained to you in his paper. We had a good deal of trouble in getting that arm down, but did get the fragments within possibly as eighth of an inch of each other. I put the arm up in plaster, in extension, and nature was kind enough to fill up the gap, and give us solid bony union. The boy has a perfectly normal right arm today.

Another thing I would like to disagree with Dr. Simon on (and I am not saying it in any mean way at all), is the hot and cold water. This should be given—hot, cold, hot, cold—one immediately following the other, instead of hot five minutes, and cold two minutes. In other words, the change from hot to cold should be instantaneous.

Other than that, I think all he has told you is absolutely correct, and beautifully shown. I do not remember having seen a series of pictures, of this type, which have shown the condition so well.

Dr. T. M. Oxford (Shreveport:) I have thoroughly enjoyed this paper given by Dr. Simon.

I want to mention a fracture which I have labeled the embarrassing fracture dislocation for the reason that the dislocation is often overlooked, the fracture occurs in the upper third of the ulna, not including the olecranon, with overriding fragments. This particular fracture is often treated by the general practitioner who takes it to the roentgen ray man and says, "Doctor, take a picture of that boy's arm. He has a fracture about the middle of the forearm." The roentgenographs are made as called for, oftentimes overlooking the dislocated head of the radius above. Imagine the doctor's chargin two or three weeks later when he takes the cast off the fracture is united. But the patient extends his arm and says, "What is the knot doing in my elbow?" This is the dislocated head

of the radius that oftentimes is associated with this type of fracture.

We have had a matter of five or six cases in the past year that have been treated in this manner. For this reason I want to call it to your attention.

Dr. J. E. Walsworth (Monroe): In fractures of the forearm, there are three points as a general surgeon I would like to emphasize, which Dr. Simon brought out in his discussion.

First, is the correct interpretation by clinical and radiological examination of the definite fracture point. This is the first time I have heard presented in the South, the importance of said definite interpretation of fracture point as a guide in the fixation position of the fragments. I would have you study again the significance of Dr. Simon's teachings, since all of you who have had experience have observed patients coming in with fractures of the forearm, improperly treated, and resulting functional incapacitation.

Emphasizing the subject further, the first essential in all fractures is to save the life of the patient; second is to save the extremity; third, reduce your fracture by extension and counter extension; and fourth, is to have it immobolized until absolute healing has come about.

Emphasizing a further point in the reduction of a fracture, you must remember that the distal fragment must always be placed in the position that the central fragment points, no matter what position that may be. In fractures of the radius in the upper third, the proximal fragment is always found in supination, and, therefore, the forearm, wrist and hand must be fixed in the position of supination after proper reduction of the fragments; or, if you should place a fracture of this type in pronation you would certainly have it twisting on the axis, and have ultimate loss of the supination function.

In fractures of the radius, below the insertion of the pronators, the proximal fragment is found in mid-position and the fixation after reduction must be likewise in mid-position and so on down the line as Dr. Simon has so ably presented.

Now, another point I want to introduce and that is the use of interfragmental analgesia, a term coined by Lorenz Bohler of Vienna, Austria—and simply means this: In every fractured area there is deposited between the bony fragments, and within the surrounding tissues, depending on the amount of trauma or injuries to said tissues, a definite hemorrhagic serum—a serum that is most irritating to the nerve filaments, producing therein pain and at times marked muscular spasm, which in turn results in displacement of the bony fragments and occasional overlapping. This said serum and associated muscle spasm, and pain causes the patient much discomfort, and even with general anaesthesia many difficulties in proper reduction of said fragments, whereas, if you will equip yourself with a simple 10 c.c. syringe, hypodermic, 10 to 40 c.c. of two per cent novocain, 10 c.c. of normal saline solution, with a hypodermic needle sufficiently long and large to reach into the depth of the interfragmental area, you will be in position painlessly and easily to mold those fragments back into their normal relationships.

Note this, sterilize a small area nearest to the fracture line, paint it with tincture of iodine, introduce your needle gently but definitely into the interfragmental space, attach your syringe filled with normal saline solution, inject a few c. c.'s of said solution into the interfragmental area, detach your syringe, and you will notice the normal saline solution will now come back through the needle as a colored solution—it having dissolved the blood clot of the area. You will notice further that the point of the needle is not within the larger vessel (artery or vein) because if it were you would have the definite bright blood coming back. Therefore, having confirmed your position, reattach your syringe loaded with the two per cent novocain, inject from 10 to 40 c. c. according to the size and age of the patient, into this area, the said analgesic solution will then permeate every avenue of the tissues which have been previously permated by the blood with serum resulting from said injury—changing the irritating blood and serum to an analgesic solution, thereby relieving the pain, relaxing the muscle spasm, and permitting easy, gentle, but definite approximation of the fragments and molding them back into their normal positions. The said analgesic effects will last sufficiently long for permanent fixation of the extremity.

Referring to the fixation, I feel impelled to call your attention to the advantages of the non-padded plaster of paris molded splints, and while I shall not describe the application of said fixation, I would ask that you study the original Bohler method to the end that your diagnostic studies which Dr. Simon has brought to you with his technics of reduction, so wonderfully presented, may be correlated to the ultimate functional restoration of an otherwise tragical situation.

Dr. H. T. Simon (New Orleans): In closing, I wish to thank my two Fellows in orthopedics, Drs. A. Scott Hamilton and Charles L. Farrington, and Mr. W. H. Stewart, medical artist at the university, who have materially assisted me in making this picture.

MANAGEMENT OF RUPTURES OF THE OSTERIOR URETHRA:

WITH REMARKS CONCERNING ALKALINE URINARY INFECTIONS*

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For the purpose of this study, ruptures of the deep urethra are classified as produced by:

A. Pathologic conditions.
   1. Rupture of abscesses in Cowper's or suburethral glands.
   2. Strictures, causing back pressure of long duration.

B. Traumatism.
   1. Puncture wonds by missels, instruments.
   2. Straddle injuries incurred in falls.
   3. Crushing forces and violent impacts, which are usually associated with fractures of the pelvic, and other bones.

CASE REPORTS

Case 1. White male, aged 30, married. Gonorrhea three years before. Multiple recurrences, multiple fistulae, pointing at varioua times, and in different locations along left perineum from scrotum to coccyx. Gonococci present in smear. Agglutination positive for undulant fever. Recurring chills, fever, sweats, with general aching and local pain, had been uninfluenced by self administration of a great deal of quinine.

Treatment: Gonorrhea cured. Brucella vaccine given, with marked reaction thin pus was cleaned out of left ischeo-rectal space and the whole cavity loosely packed with mercurochrome soaked gauze, extending clear through from Cowper's gland to counter puncture to left side of coccyx. The urethra was later dilated with flexible bougies. Completely cured. Good stream, no fistulae, no more suppuration.

Fred Angle of Kansas City, has studied more than 100 cases of brucellosis, a few of whom with suppurative processes, were resistant to treatment until their suppurating conditions were cleared up.

Case 2. Puncture wound. Colored male, aged 41, married. Gonorrhea, strictures, followed by urinary infection and prostate abscess with acute retention. A negro doctor attempted catheterization with a metal instrument, punctured bulbous urethra, penetrated perineal tissues. Patient seen in shock, dome of bladder extended above the umbilicus. Thin, dark, foul smelling fluid, and a few small black clots escaped from the meatus. Left perineum bulging. Bladder, perineum, urethral tissues drained as described later on. Died next day.

Case 3. White male, aged 52, widower. Fell across back of chair while hanging window shade. Made no attempt to void but called doctor immediately. No bulging in perineum. Soft rubber catheter passed easily into bladder and tied indwelling for two reasons: first, splinting effect; second, to serve as a conduit for urine and avoid contact and contamination of lacerated tissues. Uneventful recovery.

Case 4. White male, aged 30 years, single. Riding a freight train Armistice night, lay down in short space between a load of oil casings and the end of box car. After starting, the engine suddenly stopped and went into reverse. This shifted the load against his hips, crushing the urethra against sharp edge of ramus of the pubis, rupturing the former and fracturing the latter. I saw him before breakfast next morning. Blood escaped from the meatus, bladder dome almost reached the umbilicus. He had not urinated since the injury. Drained as described later. No attempt to repair urethra until eight days later, when it was found that a soft rubber catheter could pass easily into the bladder. It was tied indwelling, and all surgical drains dispensed with as soon as wound healing would permit. Recovery was physiologically perfect, but convalescence was aggravated and rendered offensive by alkaline infection. It did not occur to us at the time to employ the treatment which will be described later, so this boy emitted the pungent aroma of ammoniacal decomposition until discharged from the hospital.

HISTORICAL INTRODUCTION

Skill and efficiency are necessary to guide our efforts in the direction of ultimate perfection, but they must be attended by discretion and simplicity, if their successful realization is to afford the most good to the greatest number.

The history of this subject during the past hundred years records many plans for the cure of this calamity which are almost as varied as they are numerous, and in the literature at least, unanimity of thought and action seems to have been arrived at only during the last few years.

Brief reference will be made to the work of a few master surgeons who boldly abandoned the cumbersome tools of bone and belly operators, adopted the fine and delicate equipment of the eye surgeon, and wrought plastic repairs of the male perineum by methods which were

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as elaborate as they were complicated. More detailed consideration will be accorded sound urologic methods of the present time which will obtain the physiologic requirements of comfortable, efficient urinary drainage, and yet are sufficiently simple in their surgical application to permit the average urologist to employ them with confidence.

The first complete resection of the urethra without any attempt to suture the ends together, was done by that worthy Southern surgical teacher, Dugas[3] of Augusta, Ga., 1836.

Heusner[4], [5] was the first to attempt suturing the ends together, in 1882. This led directly to later attempts made by Koenig in Germany, to resect all cicatricial areas found in the urethra and join the ends together with sutures. Similar attempts were made by Guyon[4] and his pupils, Albarran, Legueu, and Marion at the Necker Hospital in Paris. The height of ingenuity was shown by those who attempted the use of grafts from the skin of the perineum, scrotum, prepuce; a pedicle flap of dartes, or fascia; the mucus membrane from a prolapsed uterus, tubal insertions of large mammalian veins or appendices, sutured in place over a catheter.

The latest report of this work was made by Scholl, Braasch and Long[5] in 1922. It seems to have been generally unsuccessful.

The use of a catheter only as a proper splint for supporting the ends of the ruptured urethra was under debate during the gay nineties. Duplay[5] used it in selected cases, Kaufmann rejected it entirely because of sepsis.

Coming closer to our own time, outstanding contributions were made to this subject by Maximilian Stern[6] of New York, Hamilton Russell[4] of Melbourne, and Granville McGowan[4] of Los Angeles. They excised and resected cicatrices radically and completely, did plastic repairs extensively, employing about all of the anatomic elements of the male perineum. Exclaimed the masterful McGowan: "I know of nothing in surgery that is quite so disgusting as to see an operator messing at a stricture with inadequate and unsuitable tools, destroying by clownish gestures whatever favorable chances the subject may have of recovery from his terrible disease."

This was in 1923, and at the same time another Californian, Miley B. Wesson,[7] published the most accurate, scholarly, and comprehensive anatomical studies of the fasciae of the male pelvis and perineum that have ever been made. I am aware that Abraham Colles,[7] of Dublin (1800) and Gordon Buck[7] of New York made isolated references to these structures, but for complete and coordinated consideration of this entire anatomical region, Wesson has nowhere been equaled. This anatomical knowledge enabled White and Ritch[8] in 1927 to clarify the locations of surgical "points" for extravasations after urethral rupture.

The genius of present day urologic surgery is perhaps reflected nowhere with greater brilliance than in the manoeuvers now being employed to secure urinary continence. The Goebell-Frangenheim-Stoeckel[5] operation has been devised. Abeshouse[9] of Baltimore, Deming[5] at Yale and others have employed, usually with success, tissue transplants of either muscle or fascia, and consisting of rectus, pyrimadalis, levator ani, gluteus maximus, adductor magnus, and gracillis.

When the gracillis is used, the patient may learn to start and stop the urine by abduction and adduction of the thigh, thus imitating that renowned canine reaction of the thigh, which is certain to be stimulated by the sight of every telephone post.

A rupture in the deep urethra is a serious calamity. Physiologically, the best time to begin treatment for it is before the next urination would ordinarily occur. The opportunity for instituting successful treatment will not be so favorable at any subsequent time. This discussion will refer to possible shock only by stating that the gravest hazard always demands first attention. The further solution of this problem requires the application of different principles in three phases:

1. Immediate, or drainage phase.

2. Intermediate, or control of infection phase.

3. Ultimate, or repair phase, with recovery of physiologic micturition.

1. The degree and duration of morbidity, as well as the rate of mortality will depend entirely upon the correct management of the im-

mediate phase. If treatment is too long delayed, or improperly carried out it is sure to result badly. This implies drainage in its most comprehensive significance. Drainage of the bladder and all extravasating areas, but most important for physiologic restoration, drainage of all damaged tissues about the deep urethra. Efforts at repair have no place in first phase treatment. They are pathologically not feasible, surgically unsound, and physiologically unsuccessful.

I believe like Martin[10] of Los Angeles that primary repair of these urethral tears has been overstressed; that primary suturing is ordinarily unnecessary and superfluous since they seldom hold; that nature will repair the damage in nearly every case if drainage is ample from every area, especially from the tissues surrounding the deep urethra. This is neatly and quickly accomplished by carrying a Guiteras staff down through a suprapubic opening, into the bladder neck and out through the bulbous urethra.

An incision is made over the point of the staff where it appears in the perineum, a catheter is attached and drawn backwards into the bladder where it may be fixed in the location desired by means of a linen suture. A medium sized Pezzer is then put into the bladder through the suprapubic opening, and the wound closed after leaving a tissue drain in the space of Retzius, and Dakin tubes for use during the second phase if desired.

Culver's[11] plan is similar to Martin's, with this variation which applies especially to straddle injuries. He passes one Guiteras or Hagner sound into the urethra, and another retrograde. Manipulation brings the tips of these two sounds together, and the urethral sound is made to follow the retrograde sound into the bladder. A good sized catheter is now tied on and the sound withdrawn, leaving the catheter fixed indwelling. This reestablishes drainage, mainmains the continuity of the urethra, forces the two layers of the triangular ligament into their proper relative position, and supplies a bridge for control of the newly formed urethral mucosa.

All are agreed that treatment should begin immediately after injury; that early, even premature incision for drainage of the periurethral tissues is better than one done too late; that the exaggerated lithotomy is a dangerous posture for any immediate phase operation because urethra or bladder may become further injured by fractured ends, or spiculae of bone; that treatment should be applied in separate stages suitably spaced; and finally, that delicate surgical judgment is required in selecting the optimum time for ultimate phase revision. It must be late enough to permit swelling to disappear, infection to be controlled, and the patient to recuperate, yet early enough to anticipate dense fibrosis and permit a neat urethral anastomosis.

2. The intermediate phase may ensue within the next few hours, to continue on through the control of infection, a period of from one to two weeks or more. About 1860 Pasteur[12] discovered that a staphylococcus which he called Micrococcus ureae, could split up urea into ammonia and CO_2, resulting in the formation of ammonium carbonate. Sarcina pulmonum is also a urea splitter, and in New Orleans the Bacillus proteus is considered to be the usual cause of alkaline infections.

Our attention was directed to this question in 1925 when an epidemic of 36 cases of alkaline infection of urinary sinuses occurred in Johns Hopkins Hospital. Thompson began studies to learn the cause of this outbreak but died, and the work was concluded by Shaw and Hill[14].

They incriminated a Gram positive diplococcus which they named Choryne-bacillus thompsoni in honor of their predecessor.

This group of alkali producing organisms are not susceptible to the usual germicides. The odor immediately disappears, and the germs seem to be exterminated after a few days, treatment with 5 per cent acetic acid dripped into the wound through small tubes. After this 2 per cent chlorazine may be used for any other form of infection, when present, through the same set up as in Dakin treatment. Alkaline infection has been a menace in urologic surgery, even when it did not become serious.

At the American Urologic Association meeting last summer, I heard Davis'[15] paper, and saw him operate, demonstrating a new method of closing bladder incisions, and employing the

principles brought out by the Hopkins Hospital group ten years before.

Last month I removed stones from an incontinent and intolerant bladder. There was no urine, but a small amount of amorphous substance of the consistency of buttermilk, was found with the stones. A cystogram was impossible for the fluid would not go in, and even under anesthesia, the bladder would not hold 10 c.c. It was heavily infected with a Gram positive diplococcus. Davis' technic was carried out. The odor promptly disappeared and the organisms were gradually eliminated. Several days later I went to bed with influenza. On returning to the hospital I found the Pezzer sanded up and ammoniacal odor present. Chlorazine had been substituted for acetic acid in the meantime. Dirty gray membrane and flakes were in the wound which was painful. The tube was opened, acetic drip resumed, and the alkaline infection promptly cleared up. Two weeks after admission the patient was discharged, sinus still draining, but clean and odorless.

3. After a brief interval for recuperation the hitherto torn and traumatised urethra will arrive at the ultimate phase of treatment. This will consist of the passage of flexible bougies to about 28F. and probably a Kohlman dilator for a few sizes beyond. Patient should return for recalibration occasionally for about a year.

If it were possible to secure conformity with the simple airflow smoothness of the above outlined three phase program in every case, this would indeed be a unique contribution to urologic surgery, but a perfect plan to fit every case will never be achieved. Cases will continue to occur due to delay and mismanagement, or because considerable damage to either the urethral channel or its blood supply has produced sloughing and necrosis, with extensive cicatricial coarctation, which will demand the proper form of surgical repair. When this necessity arises, the wise doctor will do well to consider both the patient and his tissues. He will distribute the risk involved over a period of time which will enable him to improve the condition of the tissues and also to increase the vital reserve of the patient. No business executive would immediately assume the complete retirement of a financial obligation incurred for any major public benefit. He would arrange to meet the obligation in convenient installments over a suitably prolonged period of time. This condition requires bonded surgery on the installment plan. Prostate and kidney surgery have been made reasonably safe undertakings by spreading the hazard over two or three separate stages. This doctrine has never been dramatically promulgated for traumatic surgery of the male perineum and deep urethra. We know that when we adopted these principles for doing prostate and kidney surgery, we began a new era of safety and contentment. When we apply them systematically to ruptured urethras and extravasations, we will reduce the duration and degree of morbidity and the rate of mortality, and increase the proportion of both physiologic and vital recovery.

SUMMARY

1. Ruptures of the deep urethra are classified.

2. Conditions discussed are illustrated by five case reports.

3. History of urethral repair work is briefly recited.

4. The appropriate management for ruptures in three logical phases, is given in detail.

5. The importance of drainage in advance of bloody infiltration, or extensive urinary extravasation is indicated, and the necessity for physiologic, as well as vital recovery is emphasized.

6. The conclusion is arrived at, that the same principles of interval operations in separate stages, which made prostate and kidney surgery tremendously safer, are similarly applicable to traumatic surgery of the deep urethra, and should be adopted for work in this region also.

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DISCUSSION

Dr. John G. Pratt (New Orleans): Traumatic rupture of the urethra is seen frequently in the Charity Hospital. We get these cases that are injured in everyday life, straddle injuries of the perineum with rupture of the urethra, and we get them where the urethra has been rupturd by doctors in the passage of instruments.

Most frequently, however, when rupture of the urethra occurs it is not until extravasation occurs that we see these cases, which is very bad inasmuch as when extravasation occurs the tissues become infiltrated with urine and the infection usually occurs at the site of the extravasation. If we could get these cases early or immediately following the injury—and injury to the urethra can easily be told by the hemorrhage which occurs from the urethra—by diverting the current of urine from the urethra by suprapubic drainage we can save extravasation of urine into the tissues.

The use of a catheter as an indwelling catheter in the urethra, if a catheter can be passed, only puts off the extrasavation of urine, because it will occur when the catheter has been removed if the urethra has been torn or ruptured. I had this very forcibly impressed upon me several years ago, where a urethra had been torn by the passage of an instrument and the man came in with hematuria. I put a catheter into the bladder and left it in as an indwelling catheter for a period of seven to ten days. On removal of the catheter, the man had a chill, high temperature, and the next day when I saw him he was extremely sick. I thought he had an ascending infection of the kidneys. No sign of extravasation of the urine was present in the perineum. The following day he was dead. He had a retroperitoneal extravasation of urine. This man's life could have been saved if suprapubic cystotomy had been done on him and the urine diverted from the urethra.

So immediate attention to these cases is absolutely necessary in order to prevent extravasation of urine and to maintain the tissues about the ruptured area, or the urethra, in good condition so that repair of the urethra will be much simpler later on.

The placing of a catheter to splint the urethra can be done with fair ease at times, and at other times is quite difficult, particularly if there is much hemorrhage around the torn urethra.

These cases usually develop strictures no matter what you do. They usually turn up with a stricture which may come on in anywhere from a year to ten years after the rupture of the urethra. If there has been much infection in the perineum, these strictures are very dense and very hard to handle, and hard to keep open by dilatation.

Infection of the tissues following rupture of the urethra is very common. It usually occurs following extravasation. Alkaline infections, which we get in a certain number of the cases we see, is a very mean type of infection which delays healing and is hard to combat. We are using every method we know of today to try to overcome alkaline infections, and sometimes we think we are rather successful and other times we think we are very unsuccessful. We are using acetic acid to acidify the urine, as organisms like alkaline media to live in. Acetic acid does help for a time, but it does not cure alkaline infections all the time.

Dr. D. C. McBride (Alexandria): I would be taking up the time of this Society to attempt to discuss Dr. Foster's paper, as I am certainly not competent to discuss it. I think he really asked me to discuss his paper because I referred three or four cases to him.

There is one thing for which we in Alexandria owe Dr. Foster a vote of thanks. We have one small hospital up there, and Dr. Foster treats his cases in this hospital.

Dr. M. H. Foster (Alexandria): On the discussion made by Dr. Pratt today we are all in accord.

I appreciate the remarks Dr. McBride made. I am reporting in this paper the treatment of one case to which we thought at one time we would apply the work done in the Hopkins Hospital and the surgical technic further contributed by my friend, David M. Davis, Professor of Urology at the Jefferson Medical College of Philadelphia.

This approach to the bladder is the modified Pfannenstiel incision. After he has achieved the purpose of the operation, the bladder is closed around the drainage tubes. A tissue drain is placed in the space of Retzius. The rectus muscles are closed longitudinally by interrupted sutures and the fascia is closed transversely.

The drainage tube is here, and the symphysis is here. Notice the stitch. Then you treat any infection, close your wound and get primary heal-

ing of this modified Pfannenstiel transverse incision. The drains are brought away from the incision you make to get into the bladder at the operation.

EMPYEMA THORACIS*

MARVIN T. GREEN, M. D.
RUSTON, LA.

While empyema has been recognized and variously treated from earliest times, it was the work of the Empyema Commission of our Medical Service of the World War which first standardized the principles of treatment and care of this condition and served to accelerate our interest in lowering the mortality from this complication. Much progress has been made since this outstanding work, in spite of which the mortality from empyema thoracis remains high. While we are all more or less familiar with the work of this Commission, it is the opinion of no less an authority than Ochsner that our present high mortality "is probably due to the fact that the fundamental principles which were laid down by the Empyema Commission are not generally appreciated and that cases of empyema are not individualized." To emphasize this assertion and to re-affirm the basic standard principles in the management of empyema, is the basis of this thesis.

Empyema is not a primary disease but secondary to some other condition, usually pneumonia. Other causes may be pyemia, tuberculosis, actinomycocis and the exanthems. Injuries and surgical operations or their complications may precede.

The pneumococcus is the most frequent causative organism. However, a variety of other organisms may be present. In the post-epidemic influenzal cases the hemolytic streptococcus is the usual offender.

Because the treatment is largely determined by the classification it is well to distinguish here between two large groups of cases, namely, those following the pneumonic process, usually lobar pneumonia—metapneumonic, and those in which the pleural infection occurs in conjunction with the pneumonic process — synpneumonic. This is most frequently associated with lobular pneumonia or influenza. The character of the pleural exudate in the two is of diagnostic importance. In the former it is usually thick, purulent, and contains much fibrin. In the latter it is usually serous or hemorrhagic. In the synpneumonic type the mediastinum retains its usual characteristics; that is, it is freely movable and changes in pressure on the affected side are reflected to the opposite side. This is important in considering plans for treatment.

The pathological and physiological problems encountered in empyema, too, must be carried further in their consideration than merely an exudate in a pleural cavity. We are dealing here with a complication of a systemic disease, and a patient who has already had his mettle tested in a severe ordeal to combat the primary infection.

The mortality from empyema closely parallels the mortality of the primary disease. If we have a season of mild pneumonias with a low mortality, we can likewise find a season of empyema with low mortality. A season of pneumonia of high mortality will run a parallel curve of empyema mortality. In considering results of management this must be taken into consideration. Mortality per cents for different workers in different sections of the country and during different seasons have been shown to vary from about six per cent to above forty per cent, varying with seasonal infections, the primary disease, the etiologic organisms, the age groups, and complications. According to Graham and others, death from an uncomplicated, unilateral empyema is rare. The complications found in empyema, however, are frequently to be regarded as complications of the primary disease of which empyema also is a complication. The method of treatment that is, whether aspiration, open or closed draining, rib-resection, or intercostal puncture does not appear to alter the mortality statistics. In reviewing a group of statistics it is interesting to note that in 1931 Danna reported 35 cases from

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Charity Hospital, New Orleans, where aspiration and air replacement was the method of treatment and the mortality was 5.7. In the same year Ochsner and Gage reported 124 cases from the same institution collected over a ten-year period from the various services, and in which the method of treatment was various, and a mortality of 15.3.

In considering the plan of treatment for empyema the aims to be accomplished should be definitely kept in mind and may be outlined as follows:

1. To relieve toxemia.
2. To relieve intra-thoracic pressure.
3. Avoidance of early open pneumothorax.
4. Rapid sterilization of the diseased area to prevent the condition from becoming chronic.
5. Early obliteration of the cavity and expansion of the lung.
6. Good medical care with special attention to the nutrition of the patient.

The toxemia incident to a large serous cavity filled with a purulent exudate is enormous and should be relieved as early as possible without opening up new avenues of absorption. In this same connection, too, increased intra-thoracic pressure demands early consideration. A decreased vital capacity from compression of the lung and the consequent respiratory distress along with circulatory distress from displacement of the heart and mediastinum, demands early relief. During this stage aspiration is best employed to relieve intra-thoracic pressure. The introduction of air to replace the aspirated fluid as advocated by Danna is a physiological procedure. Cases are recorded in which one aspiration resulted in a cure. We have had one such case. A man 52 years or age was referred to the hospital with an empyema following a severe influenza. The right chest was flat up to the third interspace and there was absence of expansion on the right side. The P. M. I. was in left anterior axillary line. The man was dyspneic and very ill. Seven hundred and fifty c.c. of a thin exudate was aspirated and replaced with 700 c.c. of air. The patient was immediately relieved and had a sense of well being. His convalescence was rapid and there was no further fluid formation. X-ray of the chest two weeks later showed the lung fully expended and normal.

The avoidance of early pneumo-thorax was especially stressed by the Empyema Commission and is now recognized as a primary consideration in the management of empyema. In the early empyema the change in pressure occurring in one pleural cavity is reflected in the other. In the event of a large opening in the affected chest, circulatory collapse or asphyxia is a most likely sequel.

Rapid sterilization of the diseased area is obviously a first essential to prevent the condition from becoming chronic. Good, free, complete drainage is essential for rapid sterilization of the cavity since the pleura has the ability to sterilize itself if these conditions are met. However, since granulating surfaces are rendered clean and healing stimulated by irrigating with Dakin's solution, this is probably a useful procedure if there is no bronchial fistula.

Early obliteration of the cavity and expansion of the lung is important in preventing chronicity. Many procedures are suggested for hastening expansion of the lung such as blowing up balloons and into water bottles, and playing wind instruments. It is the consensus of opinion that no matter what efforts are made to re-expand the lung ultimately it must be maintained in the position of re-expansion by adhesions between the parietal and visceral pleura. Probably the contraction of these adhesions in the healing process plays a large part in re-expansion.

Good medical care and forced nutrition is too often overlooked in the care of empyema. We are all familiar with the picture of a thin, mal-nourished, anemic looking individual slowly convalescing from empyema. Probably this is a factor in the slow convalescence. These individuals should have a high caloric, high vitamin diet and be forced fed. An intake of 3300 to 3500 calories was advocated as a basal diet in acute empyema by the Empyema Commission.

In the treatment of acute empyema there

are three fundamental methods of treatment each of which are variously modified:

1. Aspiration.
2. So-called closed drainage.
3. Open thoracotomy.

In the various treatises and in reviewing the literature, we have always been impressed that most surgeons are committed to some more or less routine method of treatment. This is our effort to stress the fundamental aims in treatment. And we believe these should be kept uppermost in mind and the method or methods adapted to the individual case. These methods and their various modifications are amply described and discussed in the current literature.

DISCUSSION

Dr. Walter O. Moss (Lake Charles): On reviewing Dr. Green's manuscript, I was immediately impressed with the fact that he had very thoroughly covered the ground in regard to empyema.

Empyema must be considered a surgical entity unto itself, and it makes no difference in any generalized method of treatment whether it be aspiration, the open or closed method of drainage, because each case is individual. Some cases that are opened could have remained unopened with relief to the patient because of the absence of a great hole in the chest wall and the future occurrence of chronic empyema and a large mass of adhesions, with resulting complications about which we all know.

Dr. W. P. D. Tilly (New Iberia): After discussing this very interesting subject of empyema, some fourteen or fifteen years ago, with Dr. Danna of New Orleans, we started this aspiration system on our staff. I am just up here to say a few words in that regard.

It is a simple method and it is easy. The average man who is doing work even in the rural districts, who has occasion to have these cases, might use this method with satisfaction. The patient is at ease shortly after the operation. You do not require very much of an anesthetic. The end result is surprising. Many times, one aspiration, or two or three cleared the case completely and avoided a very serious major operation.

If we can strike these cases at an early period, immediately after we have made a diagnosis of empyema, inject air and withdraw that fluid, it is rather surprising that more are having these serious and complicated operations.

I just want to make this point, because it is interesting. It is one that has provoked much discussion all over the Middle West, and they have sometimes criticized my dear old chief for it, but I have seen some pretty fair results in the past fourteen years.

Dr. James E. Walsworth (Monroe): I should like to tell you a little experience I had which brought to me the idea of conservatism in the handling of these cases.

Briefly, I was referred a little boy with a definite empyema. Aspiration had already been made and the position located with adhesive. When the case came in for operation, we confirmed the findings by x-ray and further aspiration. We sent the little fellow up for general anesthetic to do an open method. The case, for some reason or other, was shifted, and when we went in after scrubbing up, the patient was asleep and we proceeded to open up. Just as we opened the pleura, emphysema came up and the baby collapsed, and we realized we were on the wrong side. We immediately sealed it and resuscitated the baby and the little fellow made an uneventful recovery. The site of the pus was never opened.

That brought to me the fact that a great many of these cases will get well with simple aspirations and without the marked surgical procedure that we sometimes do. Since then we have had a number of cases to confirm that which brought to us a great conservatism in the handling of these young babies, especially.

Dr. Marvin T. Green (Ruston): I should like to thank the gentlemen for their discussion.

Relative to the point made on aspiration, it is my opinion that attempts at cure should always be made by the method of aspiration and possibly air replacement, if you prefer, before any open drainage is instituted. The reason I say that is because we get a large percentage well with simple aspiration without having to do open thoracotomies or even intercostal drainage. It is a physiological procedure and an economical procedure because during the period of aspiration most of these patients can be allowed up. Their toxemia can be sufficiently relieved so that they are not sick patients while they are going about with their empyema.

The purpose of this paper, however, was not to stress treatment. As I stated in the beginning, most theses on empyema deal with specific forms of treatment, and we are impressed that most surgeons are committed to some more or less routine form of treatment. The purpose of this paper was to emphasize the essential requisites for the cure of empyema.

REACTIONS OF RELATIVES*

A PROBLEM IN PSYCHIATRY

L. L. CAZENAVETTE, M. D.
NEW ORLEANS

In the usual course of the practice of his profession the physician's diagnosis is seldom questioned by the patient himself or by his relatives. Indeed when a physician has pronounced himself on the nature of the patient's illness and the proper procedure to be followed he usually receives cooperation. The more serious the ailment the more complete the cooperation from those interested in the welfare of the sick one. These good souls will go great lengths in assisting financially or otherwise in carrying out the suggestions of the doctor whether these consist of a special form of therapy, a major operation or hospitalization.

How different is the reaction of these relatives when the physician, realizing that the situation at hand is beyond his usual sphere of professional activities, calls in a psychiatrist who diagnoses the case as one of mental disorder or psychosis. Not that the physician had not previously recognized the unbalanced mental state of his patient but he knows too well, from past experience, that making the diagnosis of insanity or major psychosis is a very serious matter and frequently the cause of bitter feelings against the physician. So he selects the assistance of a psychiatrist for this particular function.

The term "relatives" as used in this paper, is intended to include parents, siblings, uncles, aunts, cousins, and lawful relatives. Similarly by reaction is meant the behavior of relatives.

There are many objections offered by the relatives in their effort to discredit the diagnosis of psychosis. Among the more frequent objections, inspired by the wish to conceal the existence of a mental disorder, is the erroneous belief that such conditions are always hereditary. To them, the acceptance of such a diagnosis would imply that some of their ancestors have been similarly affected. As this would be a reflection on the memory of the departed ones, it is therefore unacceptable. This attitude has been observed in the past, in other departments of medicine. It is well within the memory of many here present that a diagnosis of pulmonary tuberculosis was received with resentment and indigation. The same ideas prevailed then concerning "consumption" as largely prevail today concerning mental diseases.

Should the relatives finally accept the diagnosis, another series of antagonistic activities is encountered. We are confronted with the problem of what should be done for the patient and what should be done with the patient. There will usually be a persistence on the part of the relatives that a trial treatment at home should be given. Inasmuch as they may have witnessed improvement and recovery from ordinary ailments by the use of chemotherapeutic measures, it is natural for them to suppose that similar results may be had by such a form of treatment in the mentally diseased. Should the patient be in a depressed state a "tonic" to change his imaginary ideas will be suggested. Should the patient be excited and restless a "quieting" drug will be insisted upon. You are asked to give a drug that will put the patient to sleep with the assurance that all the patient needs is rest, that after a good rest he will be all right again. To accede to such suggestions may be helpful in a way, while it may be possible to quiet a restless patient by the use of drugs for a short time only, it may also prove the absolute inability to cope with such situations at home, thus easing the way to the second problem, that is, what to do with the patient.

While it is known that the psychiatric patient will be benefited by early care and treatment in an institution the procedure of hospitalizing these patients can with difficulty be accomplished without the consent of relatives. This approach is frequently at fault. The physician will not infrequently speak of "confining the patient in an institution." This phraseology infers that the poor victim will be restrained in all manner of form, and this at once redoubles the already existing opposition to hospitalization. There is still widespread prejudice in regard to mental hospitals. In spite of the fact that it has been repeatedly impressed on the public that the mental hospital should be considered as any other hospital it

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is still considered the last resort for the most serious cases. It is valuable because it offers unusual facilities available at any stage of the patient's illness. There will be found nurses and attendants equipped with the proper understanding of the methods necessary to meet emergencies. These nurses and attendants, under the guidance of their superiors, by their tenderness and kindness to these patients in their moments of greatest need, by the use of such physiotherapy as the condition demands, have completely and forever removed the necessity of straight jackets and padded cells.

While the relatives should be told the truth about this matter of hospital care, such information should also be the equipment of the general practitioner. Many of these are in ignorance of how patients are cared for in these hospitals.

Under the title of Man's Last Specter, Inis Weed Jones writes in Scribner's for December, 1935: "The fear and mystery which have surrounded mental disorders have kept the general public from knowing what really happens to people who go to Mental Hospitals. Fear . . . fear of insanity. Fear of the pitiful victims. Fear that the malady was always hereditary. Fear of family stigma. Fear that madness was incurable . . . " and, I may add, fear that the patient, if not psychotic, would become so through contact with the insane and fear of the social and economic state of the individual discharged from such hospitals, have proved so many barriers to the proper understanding of the whole situation.

Enough has been said to bring before you the fact that much of the burden of the psychiatrist is not so much the question of the patient himself, but how to meet the reactions of the relatives of the patient with whom he is dealing.

These abnormal reactions present themselves in various degrees of intensity. It is always a severe shock to be told that a relative is mentally diseased and we therefore expect a certain amount of emotional reaction on the part of the relatives. While I am not prepared to state definitely the reason or cause for these abnormal reactions I feel that there is reason to believe that they result from a mental mechanism of the compensation type whereby these people by feeling uncomfortable and embarrassed by the discovery of a psychotic in their midst unconsciously strive to conceal their deficiency by representing themselves as in a superior state of health. This reaction may be within normal bounds but we must not be blind to the fact that such reactions have set up definite psychoses in relatives.

Dr. Lauretta Bender* reports several cases which she has termed reactive psychosis in response to mental dieases in the family. Among these are cases in which a sister reacted abnormally when the condition of a brother necessitated commitment; two cases of sisters reacting to mental illness in a sister, and several cases of mothers who reacted thus to the mental illness of their sons and daughters. She states that these are reactive pyschoses in the sense that there is a constitutional weakness suggested by the family history of mental illness and by previous episodes of the reactive relatives as well.

At present we are not concerned with such severe reactions as referred to above but with the ordinary trend of difficulties encountered in relatives of psychiatric patients, so pronounced or diagnosed. I now wish to call your attention to a few suggestions which may be helpful in preventing a too abnormal reaction in the relatives of patients. My first thoughts are in the direction of how to present the facts to the family. Realizing that a case of mental illness is frequently demoralizing to some people, it is the duty of the psychiatrist to present the situation with exceeding consideration and care, especially when the question of commitment or transfer to a hospital comes up. The proper presentation of these conditions will depend more on the personality of the physician than on his knowledge of medicine.

The avoidance of the word "dementia", even when referring to the disease known as "dementia praecox," will greatly facilitate matters. The word "dementia" implies a very severe mental deterioration and it is advisable to use the term "schizophrenia" or other milder terms which will in a way mitigate the seriousness of

*Proc. N. Y. Neurol. Soc. and Sect. Neurol. and Psychiat., N. Y. Acad. Med., Feb. 5, 1935.

the situation and will not convey a sense of permanent mental disability.

The family should know that while heredity is considered a contributing factor, the role of heredity in this direction is no greater than that played by heredity in other diseases. Mental diseases may be caused by numerous conditions apart from heredity. Rosenau presents as physical causes of mental disorders the infectious diseases, syphilis, typhoid, influenza, scarlet fever, septicemia, acute and chronic poisoning from drugs, alcohol, endogenous poisoning from nephritis, heart disease and diabetes, disease of the thyroid and head injuries. Other forms of insanity result from inherent abnormal mental make up of the patient; others from vascular changes incident to advanced age. It should not be considered a disgrace to have a member of one's family so afflicted. Such conditions may arise in otherwise perfect ancestry.

A bit of information which may prove of interest, is the fact that only a small percentage of mental patients are very dangerous. The majority of them are permitted to move freely about the wards and grounds of the hospital. Reliable statistics show that an average of 40 per cent of patients admitted to mental hospitals are able to return home recovered and improved. In our best hospitals up to 50 or 60 per cent of their admissions return home. The groups of psychoses showing high rates of discharge are the alcoholic and drug group, the manic depressive, and the psychoneuroses. It goes without saying that few of the organic group ever improve sufficiently to be discharged. I wish to call your attention to the results obtained in the City Hospital for Mental Diseases in New Orleans. The records of this hospital, as embodied in its report to the Commission Council of the City of New Orleans for the year 1935, shows that during that year over 40 per cent of patients admitted were discharged to their families and homes as cured and improved. This result was obtained in a comparatively short hospital residence, of about five to eight weeks. The members of this group comprise the alcoholics, drug addicts, toxemic, manic depressive and catatonic praecoxes.

CONCLUSION

I wish to state that the suggestions offered above, to meet the difficulties encountered by the reaction of relatives of psychiatric patients, so pronounced or diagnosed, may be summed up in one term—education: Education of the public concerning care and treatment given patients in a mental hospital. The most logical approach to the public is through the family physician. Stress is here made on the necessity of the physician thoroughly to acquaint himself with the conditions of treatment and care existing at the present time, in hospitals for mental diseases, and on the necessity of not considering hospitalization as a last resort in mental disorders. It would be well worth his time and serve the purpose if he were to read the following books or articles:

"A Mind That Found Itself" by Clifford Beers; "Asylum" by William Seabrook; "Reluctantly Told" by Jane Hillyer; "Behind the Door of Delusion" by Inmate Ward No. 8; "The Story of San Michele" by Alex Munthe, and "Man's Last Specter" by Inis Weed Jones in Scribner's for December, 1935.

DISCUSSIONS

Dr. E. McConnely (New Orleans): This subject is one that is very near to the heart of any psychiatrist and should be near to the heart of any physician who has the well-being of his patients as his first interest. There is no question in the world but that the attitude of families, relatives and friends toward mental disease many times not only prevents the proper treatment of a patient, but actually injures the patient, injures them in that they refuse to recognize the danger signs which cause you properly to safeguard the patient, injures them because they refuse to accept institutionalization except as a last resort in many cases, cases which would get well faster and improve better if in a hospital.

I agree with Dr. Cazenavette that most of this attitude is a matter of education, for, in a final analysis, the attitude of the average layman today, and of a good many physicians is a relic of the Dark Ages when the mentally afflicted were considered to be possessed of demons and when it was considered a disgrace for any family to have a mentally sick person as one of its members. There is also no question but that with the present attitude the individual who has been in an institution has a difficult time getting along economically and socially after his recovery and discharge.

If we educate people to understand that there are a great many transitory psychoses, that there are people who, because of some possible physical illness, become mentally upset but who get well and who may perhaps never have another recurrence, teach them to regard the mentally afflicted as a sick person and that there is no stigma to being sick, it will make the lot of these unfortunate individuals very much easier after they recover.

I think if we should educate people, as Dr. Cazenavette said, as to the methods that are used in properly run modern sanitariums today, and teach them to realize that mental illness may strike anywhere, that we would have a much wider interest among the public as to the well-being of these most unfortunate people and that they would demand better and more efficient institutions and be more willing to accept treatment in these for any members of their families who may need it. I feel that people should realize we need institutions of a wider scope than we have at present, at least in Louisiana, where people may be placed for observation so that their diagnosis can be thoroughly established before steps are taken to place them in a permanent mental hospital and where those who are suffering from transitory mental conditions may get well without being sent to a permanent institution. I feel that the general practitioner, as a man coming more directly in contact with the public, can better accomplish this end than the psychiatrists, although it goes without saying that we should do our share.

Dr. J. J. Ayo (Jackson, La.): I am really sorry that there are not more physicians that heard Dr. Cazenavette's paper. The subject he presented should be interesting to every doctor, for I am sure that at some time or another he comes in contact with people who have some mental disease and it becomes a problem, just as Dr. Cazenavette said. It is not only the psychiatrist, of course the psycriatrist is the last man who handles that kind of patient, and doctors should be better acquainted with the matter. It is a matter of education, among the doctors and education among the people.

There was a time, as Dr. Connely said, when people talked about a man or woman who was crazy or insane, as though they were possessed of devils, but mental disease should be considered the same as any other disease. For instance, a man has cardiac disease or renal disease, or a disease like cerebral hemorrhage, or any other disease; a case of insanity should be treated the same way, should be given the same consideration.

I have been at Jackson for eighteen months, and with me it was all new. I was told my work would be purely executive and that is what it is. I talk with these patients and see what is being done, and I talk with the doctors, in other words, look after the interests of the patients. We have about 4000 inmates. I have taken visitors through the premises and after it is all over they say "Doctor, you have 4000 people here, well what has become of them? Everything is so quiet." The place is automatic, it runs itself. People used to think the people sent up to the asylum were kept in cells, tied to chairs, kept in straightjackets, and treated as dangerous individuals, but today it is altogether different. We see as little restraint as possible. You would be surprised how few patients are restrained. The patients are treated with considerafion and the more you can make them feel at home, the better you get along with them. You have your troubles with relatives, but send the patients up to Jackson and after they are up there we have the same trouble with the relatives you had.

There are certain forms of insanity, like the praecox, and the paranoids in that they are very cunning. This kind of patients have no insight, no judgment. They never think they are crazy. We never have a paranoid who admits he is insane, and his parents and friends come to visit him and he convinces them there is nothing wrong with him, and then we have to struggle with the relatives. That is one of our problems. We like to see the manic depressive cases come in, especially the excited cases. The more they rave and talk at random, the more we feel that in a short time we are going to send them home cured. They may get a recurrence, but anyhow we send them home for the time being in a perfectly normal condition. Of course, there are other cases that are hopeless and all that can be expected with them is adjustment in the institution. They do adjust themselves and it would be really too bad to try to get them out of the institution where they are perfectly happy and get along very well.

I have nothing further to add to what Dr. Cazenavette said. I think his remarks are very timely and that it is a question of education. It is quite a problem. I do not think our laws are exactly right in regard to committing a patient. Do not lose sight of the fact that psychosis has no respect for education or rank or anything else. We are all liable, anyone of us, to become psychotic. We have no control over that. So far as senility is concerned, if some of us live long enough we are apt to see a little psychosis at that age. Our laws are not exactly right. What Dr. Connely said about having a hospital which would be considered for observation so that the word "insanity" is not said before you are exactly sure, because everybody feels like it is a stigma and one of the greatest problems you have is after you are ready to discharge a patient, is his enviroment at home, is what becomes of him.

One particular case, which I happen to know of because she came under my observation, was an excellent nurse, who came into my home as a nurse, and was there when she cracked up. She

stayed in Jackson four months, was treated with the utmost consideration; she was a manic case and was finally sent out perfectly well. This nurse—what is the attitude to be towards this lady? She knows she has been up at Jackson and feels as though people know it too, and will not give her employment. Those are sad cases, and many times we do not know what to do.

Dr. Roland Young (Covington): I think this problem can be best solved by the family doctor, by the education of the family doctor, in turn the public particularly, in regard to these diseases, especially since mental disorder does not usually occur at all from one specific thing. That reminds me of the great Doctor Ed. Strecker of Philadelphia and his talks today before the general profession entitled "The Non-Specificity in Etiology of Nervous and Mental Diseases or Disorders." The family doctor is probably the one who has the confidence of the patient and the family as well. The nerve specialist works through him and is thereby very much aided. The education of the public in regard to mental or brain disorder as of disorder of the stomach, by simply some plain every day illustration, I think would be of most benefit. This applies to the family as well.

I had a patient not long ago—Doctor Unsworth is familiar with this case—I got out late at night to see this particular patient and was rather in a hurry. This patient was in a frank psychosis and husband much distressed and disturbed. The husband said "Doctor, what can I do? I must get her away. Somebody is going to find out something about this." When I suggested institutionalizing this case, the husband cried and wept and showed evidence of an acute impending psychosis. This is so sad and unfortunate for the patient.

After recovery, as a rule, when these cases leave the hospital contact occassionally with the doctor for psychotherapy is necessary for sometime. Now, if the family is going to feel as this husband did the patient is going to feel about the situation as they do and will be running to the doctors and back for psychotherapeutic help under cover of darkness.

Dr. L. L. Cazenavette (In conclusion): I have nothing to add except to thank the discussors of this paper.

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A SIMPLE AND EFFICIENT AID IN THE DIAGNOSIS OF ENDOCRINE DYSFUNCTIONS*

RUFFIN A. PAINE, M. D.
SHREVEPORT, LA.

The ductless and mixed gland dysfunction indicator is a compilation of signs, symptoms, diseases and syndromes, which are, according to the leading authorities on endocrinology, the most frequently encountered, and so applied on a mechanical device that it will show all of the endocrine factors for a differential diagnosis where two or more glands are involved, resulting in a complete comprehensive and instantaneous aid to facilitate diagnosis. The use of this indicator is applicable in cases which have insufficient or no pathology of the larger organs and no apparent physical causes to account for the presenting complaint or condition. The outline gives the differential setups where two or more glands are involved.

The fourteen ductless and mixed glands, a composite from several authorities, are arranged numerically more or less in the order of their importance in the role of endocrine function, and placed in full view on the handle of the indicator.

The role of the endocrines is conceded to hold a position of vast significance, consequently our attention is being directed towards treatment and relief for these cases.

A thorough review of endocrinology reveals numerous overlappings of glands, symptoms, and conditions, the cause of this being a very complex interrelationship. Herein lie our perplexities. The subject is interesting, the literature is voluminous, the study is tedious, the diagnosis is unsatisfactory, and the results obtained in many instances are disappointing. All physicians are aware of the presence and fundamental action of the endocrine glands, and no doubt recognise the salient features of dysfunction of each, if taken separately, but in disorders of the endocrine system with its interdependence, synergism and antagonism existing to a very irregular complicated degree, we may at the outset expect a complex involvement in probably the majority of cases.

The comparatively few scientific workers are responsible for the knowledge gained in this field of endeavor and the overwhelming number of physicians in private practice are attempting its application to the best of their ability, but the latter are confronted with an obstacle, primary in importance, which prevents them in many instances from obtaining the desired results, namely—diagnosis.

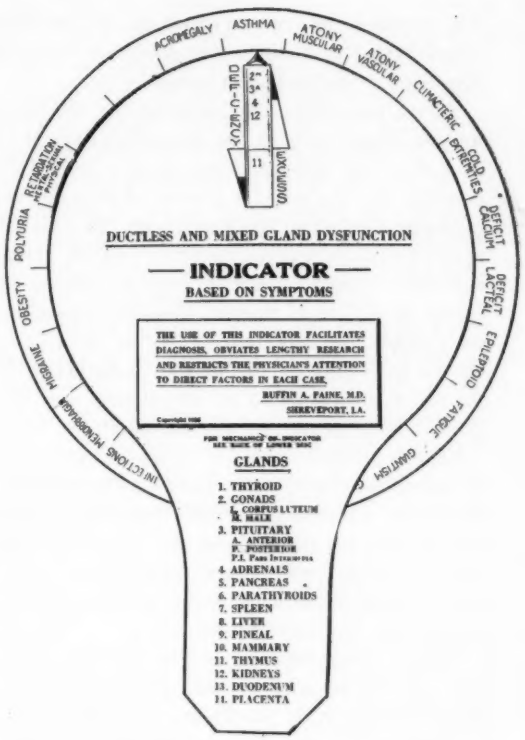
*Read before the Shreveport Medical Society, Shreveport, January 7, 1936.

The conservative physician, who beyond doubt is in the majority, will either manage cases with fear and trembling lest he may be dealing with glands of grave importance or he will not make any pretense at all because of the apparent impossibility of setting up a differential diagnosis. Excellent results are produced in a few obvious cases having only one or two glands involved, but many cases receive inadequate, some improper and others probably no treatment when pluriglandular, the type causing difficulties and even failures in diagnosis.

Should we agree with the preceding paragraphs, then we must admit that a working or differential diagnosis founded on facts is of unlimited value and the means to this end should be welcome. This compilation of the most common disorders, whether they are diseases, signs or symptoms, with all possible endocrine factors, resulting in a simplified outline, is the basis here for the differential possibilites. The chief complaint of an individual case is analysed so that it may be applied to a classified disorder of a similar nature found on the periphery of the indicator. Rotate the circular disc until the section applicable appears above the arrow and instantly you have, presenting in the slot, all etiologic factors that must be considered, and subjected to the process of elimination. The physician's attention is directed only to the glands shown in the slot, as being either in deficit or in excess, and the features of each are carefully reviewed and checked by a physicial examination and scientific tests if indicated. The glands not shown in slot are not to be considered as etiologic factors and are eliminated at once, thereby saving much time from endless research, to be utilized to better advantage.

The thyroid is given position number one due to its function of affecting all glands and cells in the body. It plays a tremendous part in function, is severely taxed daily through its stimulation to every organ and cell, but receives aid from probably no more than six glands, is antagonized by one, and suffers from overwork frequently, which is in proportion to our physical and mental activities.

The gonads are placed second because of their influence on mental behavior particularly



in women, who comprise a large percentage of dysfunction cases.

The pituitary, with its power of nerve control, serving as a stimulus and a check with its many variations on physical and mental accomplishments, should come third.

The adrenals, pancreas, parathyroid, and the others in the order given are similarly analysed with a view of their relative importance, and are so placed.

A few comments may be of value in the interpretations of the following syndromes and the remainder are self-explanatory: Giantism having its inception before adolescence is the result of excess function of the growth and sex hormones of the anterior pituitary, later replaced by a deficit of the sex hormones and of insulin. Acromegaly occurs after the adolescent period and is the result of excess function of the anterior pituitary and the gonads, later in the disease these glands become deficient as well as three others, the thyroid, adrenals, and pancreas.

Asthma, in the absence of cardio-renal pathology, may have its etiology in one or more of

the glands listed, not overlooking the prostate gland as a factor since this condition is more prevalent in males than females.

Atony, muscular, may comprise the unstriped muscle fibers such as the gastorintestinal tract as well as the skeletal system, and is caused by possible deficits of the glands shown on the indicator, including the thymus in the case of a child with an excess function of the parathyroids. Atony, vascular, may be due to an excess or deficit of thyroid function, depending on whether the condition is late or early, also on the pathology of the thyroid, together with the other glands listed in deficit and may include venous as well as arterial atony.

Calcium deficit includes hyper-excitation of the nervous system, many ulcers without physical causes, as well as trophic disturbances and lack of calcium metabolism in its widespread role, including pulmonary tuberculosis. The glands listed in deficiency as well as excess thyroid are possible factors.

Fatigue comprises cases which have no physical reason, such as overwork, or lack of sleep, to cause such complaint, and involves one or more of the six glands shown in deficiency.

Fermentative indigestion does not include gross indiscretion in diet or other physical reasons for temporary disturbances, but is more or less chronic with acute or subacute recurrences, with no other pathology, and the four glandular deficiencies found must be considered, particularly the liver tract. Infections include many cases which can not be attributed to physical or external factors, and a thorough study of the deficiencies given must be made, especially the thyroid.

Obesity, probably the most frequent of the entire classification may have in the early stages an excess of pancreatic function, later replaced by a deficit of that gland. The distribution of fat may be diagnostic or mixed. Retardation, mental, sexual, and physical, includes cases of both sexes and all ages, and has a broad field of application, especially in children when the pineal and thymus may not show physiologic atrophy as they should.

Several representative men in the different specialties consider that the ductless and mixed gland dysfunction indicator furnishes a timely aid in this complicated field of diagnosis, and have expressed a definite desire to familiarize themselves with the simplified outline and to apply the principles of it as recommended.

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DR. HOMER DUPUY

Again it is the sad duty of the editor to comment upon the passing of another outstanding Louisiana physician. In the present year it seems that there have died a great number of outstanding and prominent doctors.

Dr. Homer Dupuy will leave an indelible impression on the minds of the medical profession of New Orleans and Louisiana. He has left equally a strong impression upon the many friends who knew his charm and abilities outside the medical world. A man with a personality that was always delightful and cordial, Dr. Dupuy had a host of friends. His professional abilities and his ability to make friends is exemplified by the many positions to which he was elected during his years of practice; such positions extended from professional positions to the presidency of many professional organizations. As a representative of the State of Louisiana in the Southern Medical Association Dr. Dupuy enjoyed a very extensive friendship with the doctors of the South.

A skilled physician, a master of his particular specialty in medicine Dupuy was not a one job man. He had many other interests and did them all well. He was a scholar and a musician, a man interested in the arts as well as the sciences. His departure will leave a great gap in New Orleans' professional and social life.

DR. JOSEPH HUME

Dr. Joseph Hume expired on October 17 after a relatively long sickness. The death of Dr. Hume leaves a big void in the medical profession of the city.

For twenty-five years Dr. Hume was in active teaching and head of his department at the Tulane Medical School. A forceful, dynamic individual, his lectures and courses were one of the outstanding features of the instruction of the upper classmen. Starting his lecture almost before the door was closed he delivered a magnificently systematic, well expressed discussion of one or another phase of urology. He was demanding of the students but if he demanded from the students he asked no more than he was willing to give to patients, or to students.

Dr. Hume was a real doctor, a man loved by his patients, a man who took the most intense interest in them and whose care was always assiduous as well as skillful. Dr. Hume was essentially a doctor for the patient, willing to sacrifice himself in any way should the patient seem to require it. While a keen student his contributions to medical sciences were not many but the hundreds, indeed thousands, who were helped and benefited by him doubtlessly

think much more of what he had done for them than what he had written.

Those who knew Hume loved him; those who knew him by reputation respected what he had accomplished. His friends and admirers were legion.

CERTIFICATION OF SPECIALISTS

Some years ago it was felt that men who attempted to practice a rather highly specialized branch of medicine, such as ophthalmology, should not be permitted merely on their own statement that they were specialists to be considered as experts in that branch specified. In other words, an ophthalmologist should not necessarily qualify to practice his branch of medicine unless he has special training of extensive and prolonged character. In order to obviate this difficulty there came into being a special board which examined those applicants who had a required preliminary training, and if the examination was passed successfully it certified that they had been passed by the board. In this way it was possible for those who are not familiar with the ophthalmologists in a given locality to discover immediately which one of those men who were listed as specialists in the American Medical Association directory actually had qualified as competent specialists. This was a distinct advance in medical practice.

In the last few years there have been a considerable number of other special boards formed for the exact purposes mentioned above. Amongst the last of the special groups to take this step have been the internists and the surgeons. The internists have organized a special board composed of representatives of the American Medical Association, American College of Physicians and are prepared now to offer qualifying examinations to those who are to be listed as specialists in internal medicine in the future. The surgical group is planning to hold examinations in the near future but the details have not as yet been consummated.

The House of Delegates of the A. M. A. has been requested by several highly specialized groups of internists to organize boards. These requests have been submitted in turn to the Council on Medical Education and Hospitals with the understanding that recommendations should be made to the Board or to the House of Delegates. The Council and the House have felt that in the more specialized branches of internal medicine a man first should qualify as an internist; he should have a full knowledge of internal medicine in all its aspects and phases before attempting to practice a particular and special division of the whole big specialty. It is planned in the future to organize further boards for those who are interested particularly in such specialties as allergy, diseases of metabolism, cardiology, gastro-enterology and what not. It is hoped that specialties of medicine and surgery will not be carried to too great an extreme. It looks as if there might be a possibility that some men may want to be qualified as specialists in onychology or become certified as a Fallopian tubist.

In the future a man will be listed as a specialist in the A. M. A. directory only if he has passed a qualifying board. At the present time there is evidenced a keen desire in many places to make use of these boards. In many hospitals and in many medical schools a man is not eligible for a high ranking position on the staff until he has shown his competency in a specialty by being certified by special boards. Undoubtedly this trend will increase in the future because a disinterested group has put their mark of approval on the ability and knowledge of the individual specialist.

CEREBROSPINAL FLUID PRESSURE AND INTRAVENOUS INJECTIONS OF SUCROSE

It has been pointed out frequently that there is a very constant relationship between a high diastolic blood pressure and increase in the spinal fluid pressure. It even has been suggested that the latter is responsible for the former.

Murphy et al* write that the most aggravating symptoms associated with excessively high blood pressure, and most refractory to treatment, are those associated with increased intracranial pressure such as headache, nausea and vomiting, vertigo and visual disturbances associated with papilledema. Furthermore these symptoms are often the prodromes of convulsive seizure.

Conditions associated with hypertension are not only of interest to the medical man but are also of a great deal of importance to the surgeon and those who practice surgical specialties. Operations are not always those that can be delayed or put off but sometimes the surgeon hesitates, to consider carefully and seriously which is the lesser of two evils, to do without the operation or to operate on the man with a high blood pressure.

In 1919 Haden reported on the use of glucose in the treatment of increased intracranial pressure. Since then other reports have been published largely of a surgical nature, showing the value of hypertonic glucose solutions in reducing increased intracranial pressure. The solution has been used quite extensively, incidentally most often by brain surgeons, but there is quite a group or school which believes that reduction of the spinal pressure is dangerous and at the best it is extremely transient. To study the effect of hypertonic sugar solution given intravenously Murphy and his associates selected a group of patients who had chronic hypertension. Those with the benign type of hypertension were found to have a spinal pressure not unduly elevated and the contrary held true in patients with malignant hypertension. They show by a very pretty graph that following intravenous injection of sucrose there is a pronounced drop in the spinal fluid pressure; there is a slight drop in the systolic blood pressure and a not inconsiderable drop in the diastolic pressure. The fall in the spinal pressure is prolonged from 8 to 12 hours, diuresis is prompt beginning in about two hours and continuing after this. The aggravating symptoms such as headache, vomiting, twitching and dizziness have been relieved by this procedure. No unfavorable reactions were observed. The amount given was from 300-500 c. c. of 50 per cent sucrose solution.

Injections of intravenous sucrose solution seem to have a distinct place in the armamentarium of therapeutic procedures which may be used in emergencies. There is one thought, however, that possibly the method may be followed by uremia, with a closing down of renal function. Apparently this objection is theoretic rather than practical, because the elimination of tissue fluids was prompt and the injection was not followed by any untoward catastrophes in the series of cases reported here.

*Murphy, F. D., Hershberg, R. A. and Katz, A. M.: The effect of intravenous injections of sucrose solution (50 per cent) on the cerebrospinal fluid pressure, the blood pressure and clinical course in cases of chronic hypertension, Am. J. Med. Sci., 192:510, 1936.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC
NEW ORLEANS

At a meeting held in October the following paper was presented by Doctor C. E. Gorman.

INTESTINAL OBSTRUCTION

For many years surgeons have been faced with a "nightmare." This condition which gives us so much concern is nothing less than intestinal obstruction.

Let us consider briefly the etiology of this dread condition:

1. Intussusception: a prolapse of one part of the gut into an immediately adjoining part. We encounter this early in life; usually the patient is less than ten years of age. Thus these are first seen by the pediatricians.

2. Adhesions: fibrous connective tissue forming from irritation or infection. These may occur as bands, or as a coating, matting the structures together.

3. Paralytic ileus: distention of the intestines with loss of peristalsis. This lack of tone is due to a paralysis of the muscle coats of the intestines.

4. Ulcerations with stricture: these are due to amebiasis, tuberculosis, or syphilis.

5. Peritonitis: either bacterial or chemical.

6. Volvulus: twistng of the mesenteric axis of the intestine.

7. Mesenteric thrombosis: thrombus in the mesentery, resulting in gangrene.

8. Masses: this may include neoplasms, inter- and extra-intestinal, foreign bodies and fecal impaction.

Having tabulated the etiologic factors, we review the signs, symptoms, and aids to diagnosis. The patient usually presents himself vomiting and in shock. He is a poor surgical risk. One should always have a flat abdominal roentgen ray plate and one in the sitting position. The latter is to show the characteristic "Herring bone" effect of the distended loops of bowel as well as the multiple fluid level.[1] Occasionally one gets a typical "step-ladder" appearance on the plate. Multiple fluid levels are conclusive roentgen ray evidence of obstruction. Clinically, we observe the distention. On percussion marked tympany is noted. Possibly a mass may be palpated, or muscular rigidity of the abdominal wall. A history is extremely important, particularly in regard to pain, which is usually very severe and griping in character. Tenderness is nearly always present. The history usually reveals a sudden onset as well as constipation and sometimes obstipation.

The laboratory procedures are very helpful in making a diagnosis. All cases of obstruction should have a blood chemistry in addition to the routine blood picture. The latter may give some idea as to the degree of infection and the resistance of the patient. The former is very helpful in determining the relative alkalosis. This later condition is produced by the loss of chlorides and other acid ions lost to the system by vomiting.

In twenty-four hours approximately 8,000 c.c. of fluid are excreted by the bowel. In intestinal obstruction this fluid becomes static and distends the loops of bowel. The absorption of this material causes a great deal of the resultant toxemia. When the pressure in the distended loops reaches that of the diastolic blood pressure transperitoneal absorption occurs.

The pathologic-physiologic condition presents a definite and logical plan of treatment. Within the past several years two great advances have been made; the development of the Levin (duodenal) catheter[2] and the subsequent Paine-Wangensteen[3] continuous suction apparatus.

The 8,000 c.c. fluid content of the intestine increases the dehydration and alkalosis. Therefore, it is extremely important that the body fluids be maintained. The necessity of this is increased if there is an indwelling naso-duodenal catheter. Vomiting also plays an important role in the production of alkalosis. The hydrochloric acid, along with other acid ions, is depleted from the body.[4]

In combating this horrible condition our first move is to restore the normal physiology in place of the pathologic-physiology. The body fluids are returned to normalcy by a continuous infusion of 5 per cent glucose in Hartman's solution or saline. During the past year the development of the Vacoliter Bottle[5] has simplified this task. We are now able to give continuous infusions for days. The rate of inflow is set by regulating the amount of fluid per minute. Our regular routine is that the average patient should have 3,000 c. c. of fluid in twenty-four hours. Thus, the Vacoliter is set for 40 to 50 drops per minute. With this method we do not insert a canule in the vein. We use a twenty gauge needle preferably one that is short, sharply beveled and short shafted. Furthermore, we have found that the blood chlorides can be maintained at normal by the 3,000 c. c. of glucose in saline per twenty-four hours. To control this and thus regulate the proper amount of glucose a blood chemistry is taken on admission and daily thereafter.

Immediately after the diagnosis is made from the foregoing evidence the routine plan is adopted. The main object is to "deflate" the distended loops of bowel. The naso-duodenal tube is inserted and attached to the Paine-Wangensteen suction. Next an instillation of olive oil per rectum is accomplished. The patient is then forced to retain this oil for one hour. After this he is given a flush either of soda solution or soap suds. If the obstruction is due to fecal impaction the above method is sufficient to release the mass and the patient is cured. If not cured, the abdominal distention is markedly reduced. Thus, the patient is rendered a much better surgical risk.

IMPRESSION

From this brief consideration of such a vast subject I made the following notations:

1. Patients with the indwelling naso-duodenal catheter develop alkalosis and marked dehydration.

2. If the obstruction is due to fecal impaction good results can be expected non-surgically.

3. The use of the Vacoliter Bottle has simplified the administration of glucose and saline by vein.

4. The combination of the naso-duodenal indwelling catheter with glucose-saline infusions decreases the risk involved in operating on such a case.

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5. Vacoliter Bottle (Baxter).

HUTCHINSON MEMORIAL CLINIC

Symposium on Osteogenesis Imperfecta: Conducted by the Department of Pediatrics, Dr. Robert A. Strong presiding.

Dr. Robert A. Strong (Department of Pediatrics): The subject of tonight's meeting has been defined in rather peculiar ways in various text-books. One of them that I found was that the term is most generally used to denote a rare intra-uterine disease, the subjects of which are usually stillborn, although they occasionally survive and may live to adult life. Some of them have been described as achondroplastic dwarfs on account of shortness of the limbs, but there is certainly a distinct difference and so far as we know at present, osteogenesis imperfecta is certainly a distinct entity. We have the opportunity tonight to show you one of Dr. Williamson's cases that was born in Charity Hospital. Dr. Williamson will present and exhibit the case and Dr. Harold Cummins of the Department of Anatomy will discuss the embryologic features.

Dr. Richarda Williamson (Department of Pediatrics): Osteogenesis imperfecta is a skeletal disturbance resulting from a deficiency of osteoblasts which leads to the formation of defective bone, multiple fractures and deformities. That there is a congenital defect in mesenchymal tissue does not answer the question. This condition may be divided into three groups: (1) which is congenital and which I believe our case is; (2) which is infantile, and (3) which comes on later in life and which I think some text-books say is osteogenesis imperfecta tarda. Some people say it is due to a dysfunction of certain endocrine glands during fetal development. The parathyroids have received the greatest attention because of their influence on the metabolism of calcium and phosphorus. Vrolicken, in 1845, was the first to describe osteogenesis imperfecta as a disease which manifests itself in intra-uterine life. Just last year at Mayo Clinic, Tarda and Wilder treated a case of osteogenesis imperfecta with thymus extract and improvement was noted in one month. All of these, however, do not give us the underlying cause; we still do not know the origin. Many workers have shown that it is familial. Bronson found it in four generations. Of 55 persons, 21 had gray-blue sclerae and twenty of these had fractures. In the second family of eight, seven were affected with blue sclerae and four of these had fractures as well. She also believed that blue sclerae were due to a lack of calcium and that they were of normal thickness. Thomson said the blue sclerae were more marked in postnatal cases. The blueness may fade. In Lobstein's disease, or osteopsathyrosis, some have friable bones, some suffer with deafness and some have blue sclerae; some have all or two of the three. The late Dr. Carroll Allen was interested in cats and noticed among his cats that those with blue sclerae always had fractures of the legs. Another family, who had white Persian kittens, told me that the blue-eyed ones were stone deaf.

Case Report: I have a baby here who is now thirteen months old. This is a congenital case of osteogenesis imperfecta and as a rule they die immediately after birth or may be born dead. We have managed to keep this baby alive by keeping it in the newborn nursery at Charity Hospital. We have now, however, transferred it from the nursery to the ward. At first, the baby looked like a strong baby boy. It has the big head which is not hydrocephalic. The head is supposed to be normal, at first, in size but as a rule the bones are so little ossified that it is perfectly soft. This baby's head was just like a tense bag which changed form with change of position of the baby. The blue sclerae are also present but, I believe, are fading. I believe we have many normal children who have blue sclerotics. The trunk of the baby is perfectly normal. The limbs are misshapen. The curvatures and angulations come from old fractures which were made intra-uterine. This patient's potassium, magnesium and sodium salts were normal. I suppose in discussing treatment you have to say careful nursing. I would like to show the roentgen ray pictures which have been taken at regular intervals from the age of four days until the present time. I think the nicest plates are the ones taken when the baby was four days old, four months and one year old. When this baby was first born there were four fractures. He is now beginning to have curvature of the lower limbs. No fractures were seen in the lower limbs at four days. Dr. McIlhenny was supposed to have seen this case but he tells me that he has not. At Charity Hospital they fed this child thymus extract, I do not think with any good results. It may be because it is of the congenital type. In the roentgen ray films taken recently much callous formation is noted. The ribs have never been broken. As treatment we have tried calcium which we know is of no value, viosterol which we would have given anyhow and we have given it thymus. Whether or not the thymus extract should be tried again is a point of controversy.

Dr. Strong: There is just one point with reference to heredity that I would like to bring out. There have been instances in which there have been five of these babies born in one family.

Dr. Harold Cummins (Department of Anatomy, Division of Microscopic Anatomy): Dr. Strong has asked me to discuss the embryologic aspect of osteogenesis imperfecta, but I should like first to present another case, a stillborn female received from Dr. E. L. King shortly after its delivery.

This, too, is an instance of a congenital variety of osteogenesis imperfecta, more extreme perhaps than the one just demonstrated, because in this instance there were multiple fractures at birth, as one can see by the deformed extremities, especially the legs (demonstrates specimen). One can note also the characteristic head, which one writer has referred to as a rubber-ball head; another, a bag of skin, because of the imperfect ossification. If there is any ossification at all, it is in the form of isolated plaques, which have been likened to a fractured eggshell. When this stillborn baby was fresh one could detect crepitation with the slightest movement of the extremities. The ribs felt nodular, again indicating fractures.

In osteogenesis imperfecta the healing process occurs rather promptly and in normal fashion. Before discussing the developmental basis of osteogenesis imperfecta it is perhaps wise to recall the composition of bone. In bone there is not only a calcareous matrix, with the cells embedded in lacunae, but there exists also a background of fibers having much the same chemistry as the fibers which occur in ordinary fibrous connective tissue. I wish to emphasize this point because later in the discussion it will be brought out that one interpretation of osteogenesis imperfecta is that we are dealing not essentially with an upset in the behavior of the inorganic salts, but rather a default in the laying down of this fibrous binding material. From that point of view the bones are fragile for the same reason that the bones of an aged person are fragile. Dr. Strong referred to the names which are employed in reference to this condition. We might call it osteogenesis imperfecta, designating this improper laying down of bone tissue, and it may be termed fragilitas ossium or osteopsathyrosis, both descriptive of the fragile character of the bones. Now what is the developmental explanation of this fragility? So far as studies of its early fetal histopathology are concerned we are uninformed. There have been workers who have attempted to demonstrate osteogenesis imperfecta in the earlier fetus, however, presenting in their roentgen ray illustrations the results, not of osteogenesis imperfecta, but rather the condition that is fairly typical of a fetus which had been dead a long time *in utero* before it was expelled. When a dead fetus is not expelled promptly but is retained in the uterus, certain changes occur, among which is the transport of salts from bones through the tissues of the fetal body. Thus, if one makes a roentgen ray of a fetus that has remained *in utero* for some time since its death, you will see not the formation of living bone, but pictures of postmortem changes. The histologic studies which have been made in the late fetus as well as in the infant and other postnatal cases bear out the general statement that in osteogenesis imperfecta there is a deficiency in osteoblasts. As Dr. Williamson pointed out, these cells are probably exercising their normal activity in so far as calcium behavior is concerned but their laying down of fibers is faulty. Thus osteogenesis imperfecta might be thought of as a hypoplasia of fibers. How would that accord with the three cardinal symptoms: (1) fragility of bone, because the fibrous binding structure is inadequate; (2) blue sclerae, not because of discoloration—some writers refer to discoloration—the sclera is blue because it is thin, and the fibers being less densely woven together than in the normal and admitting the pigment of the choroid to show through; and (3) deafness. One explanation is that the deafness is due to otosclerosis.

Two years ago Dr. Stacy R. Gould, of the Crowe Otological Research Laboratory at Johns Hopkins, chanced upon a finding which suggests another possible explanation. He discovered in the petrous bones of many of his deaf subjects myriads of minute fractures; the bone had been fractured presumably under the impact of the mandible in chewing. If this damage can occur in individuals who are not afflicted with osteogenesis imperfecta, as in Guild's cases, a greater susceptibility to fracture is all the more likely in those with pathologically fragile bones. Osteogenesis imperfecta developmentally can be classified as (1) congenital, and (2) the retarded form. It appears quite probable that these two classes are simply degrees of the same faulty development, the early congenital form being the more grave and the retarded form the more mild. If we try to classify osteogenesis imperfecta into further subdivisions all sorts of difficulty is encountered and there is, after all, no point in attempting a refined classification. What is behind this faulty development? Family history was mentioned. Let us examine a family history (blackboard illustration) from a report by Kaplan of last year. It begins with a couple in which the woman displays multiple fractures, osteogenesis imperfecta of the retarded type. She was a cripple, practically confined throughout her life. Her husband was normal. Their daughter shows multiple fractures and blue sclerae. She married a normal man and had seven children, two girls and five boys. Four boys died in infancy, and while nothing is known of their history it is very suggestive that they did not survive, coming as they do from a family presenting a maldevelopment of this sort. The two girls had blue sclerae but not fragility of bone. One of these daughters married a normal man and they had two girls. One showed fragility of bone; the other, fragility

of bone and blue sclerae. It might be thought, in seeing instances of this condition in four generations, that it was inherited. It probably is in this instance, for numerous family histories are on record to prove the inheritance of osteogenesis imperfecta, but let me point out that the family tree just cited is not sufficient to establish inheritance, because in each case it is a female responsible for the transmission. This particular family history was selected as the basis for discussion of the point that there may be a metabolic or other disturbances in women which may prejudice fetal development, as instanced by the woman with osteomalacia who produces a child presenting rickets. There are some cases of osteogenesis imperfecta in which the condition seems to occur without any family background. While the possibility of inheritance is not excluded, as generation after generation is at times skipped in certain modes of hereditary transmission, the fault might result from intra-uterine handicap of the developing fetus. One case apparently lending itself to that interpretation may be mentioned. A woman in whose family there is no osteogenesis imperfecta or blue sclerae gave birth to an infant having multiple fractures and blue sclerae. The baby died immediately. In searching out the prenatal history it was found that this woman had been taking ergot and quinine and at close intervals through the first six months of pregnancy. Under these circumstances the uterus would have been a very unfit place for the development of an embyro. A factor which retards the development of the embryo, especially in the early phases, may lead to one or another type of abnormality, perhaps including this type in which the fibrous background of bone is deficient.

Dr. Paul A. McIlhenny, (Department of Surgery, Division of Orthopedics): Dr. Williamson asked me about this case and I have no recollection of having seen this child at Charity Hospital. My first connection with osteogenesis imperfecta and the use of thymus extract was five or six years ago when Bruce Gill reported two cases in which he had used thymus in osteogenesis tarda. These were six or seven years old and were bedridden. After two years of thymus extract, given 2 grains twice a day, they were able to ride bicycles, play marbles and do almost anything normal children do. After reading the article I began using thymus extract in Charity Hospital. There was a child who was taken to Touro on the third day after birth with a fracture of the left femur; this child came into my service seven years later at Charity Hospital with a deformity of the upper third of the femur and a history of repeated fractures, but roentgen ray did not bear out the history by the mother. This child was operated on several times to correct the deformities in the femora and while under treatment would be rolling along in a rolling chair and somebody would brush against her and the leg would break below the knee. The peculiar part is that they seem to reunite so readily. I put this particular case on thymus extract, 2 grains daily and kept her on it for two years. I could not see any great amount of benefit except that she did not develop as many fractures. She has now been discharged from Charity Hospital for approximately one and one-half years. Whether she has had delayed benefit from thymus extract or not I do not know. She is now walking around.

Dr. Cummins: In connection with these dystrophies of bone, Dr. Williamson mentioned cats having blue eyes and fragility. We do not breed animals to perpetuate osteogenesis imperfecta but we do breed for some other dystrophies, among which may be mentioned achondroplasia. The dachshund, for example, is an achondroplastic dog.

Dr. Howard R. Mahorner (Department of Surgery): My interest in this particular condition is indirect and is derived from a case which I showed at a Hutchinson Memorial Clinic Staff Meeting about two years ago; a case of dischondroplasia, another idiopathic dystrophy of bone. Dyschondroplasia is the most common of all bone dystrophies in the records of the Clinic. It is even more common than achondroplasia which we usually think of as having a greater incidence since the features of that conditon are more apparent. We see them as the little short muscular athletic people, not uncommonly funny men in the circus. In the case referred to a huge tumor originating from the inside of the femur in a boy aged fourteen interfered with his walking. This was removed and studied histologically. This led to a study of the question as to how dyschondroplasia might be interrelated to achondroplasia or any other idiopathic dystrophies such as Marquio's disease, osteogenesis imperfecta and hyperteliorism, and it resolves itself into a problem of dissociation of bone formation and bone growth. In the development of bone there is first cartilage consisting of living cells and a matrix. Calcium is precipitated in the matrix and forms a groundwork. Osteoblasts invade this area and imprison themselves to become true bone cells. At first trabeculated, later compact bone is evolved by partial absorption, the work of the osteoclasts, and redeposit of bone occurs around osteoblasts to form a compact zone with Haversian canals. In osteogenesis imperfecta there is apparently cessation of development of bone at the cancellous stage. It does not proceed to compact bone. I have seen no histologic sections from the bones in this condition but histologic sections of the cortex of these bones which I have found in publications do not show compact bone at all but cancellous bone. Achondroplasia, which we think of as the most common dystrophy is of another type, in which the growth line varies in its proliferation. Whereas it should

be open and growing up to 18 or 22 years it unites much earlier and there have been cases in which the epiphysis is united to the diaphysis even at birth. Dyschondroplasia has an entirely different pathogenesis (blackboard illustration). There is a failure of tubulation or diaphysation leaving exostoses on the metaphyseal side of the epiphyseal line always pointing away from the epiphysis. As yet though nothing certain is known about the etiology of these conditions, dyschondroplasia like osteogenesis imperfecta can frequently be proved to be familial.

Dr. W. H. Perkins (Department of Preventive Medicine): I have noted in the discussion that several references have been made to the ready healing of fractures and normal calcium level of the blood which seems to indicate that there is no abnormal relationship between metabolism of the calcium and the healing of fractures. Dr. Cummins has again raised in my mind a possibility in which I have been much interested. The literature mentions instances in the development of certain congenital defects in which the blue sclerotics described are associated with defective fibrous tissue. I mention varicose veins and hernia as two of them. Wide variations of fibrous tissue development are seen also in normal persons. Is there not the possibility that a condition underlies these many manifestations of fibrous tissue defect in keeping with the theories of Mall and Stockard? I ask Dr. Cummins whether one could look upon this fibrous tissue variability which occurs in many of us who appear perfectly normal as a manifestation of a congenital defect of fibrous tissues generally which might be called fibrogenesis imperfecta?

Dr. Cummins: It is extremely difficult if not impossible to draw the line between the abnormal and the normal in many characteristics. Just as human beings vary constitutionally in other respects, so do they differ in degrees of fibrous development; some individuals are more fibrous than others, as some are more hairy or more heavily pigmented. The state which is of common occurrence, though itself embracing a considerable latitude of variation, is usually rated "normal". When the fibrous tissue is deficient, even exhibiting the functional disabilities mentioned by Dr. Perkins, is it definitely hypoplastic and abnormal, the condition meriting his name of "fibrogenesis imperfecta". The basis of this hypoplastic fibrous constitution is to be sought both in the inheritance of the individual and in his developmental environment, the latter being in line with the suggestions of Mall and Stockard.

Dr. Strong: I think from what has been said that there are certain definite conclusions to be drawn. Dr. Cummins, who has discussed the embryology of the subject rather completly has given us some ideas of how we may start to trace the cause of this unusual condition. In summarizing his remarks, when he first spoke, he mentioned one which coincides with an opinion that I have had concerning, not only this peculiar deformity, but others of intra-uterine origin. This belief has been growing over a period of many years. I have always felt that there was some bar sinister between us and success in treating many children. I think he revealed it when he said that the uterus occasionally has been made an unfit place for the growth and development of what subsequently becomes a baby. Many physical defects may be explained by this. Because of prenatal conditions we have nothing with which to work. In any event, I am sure that there is much more to be learned about this subject and perhaps some of us will find out some day.

Next meeting Thursday, November 5, 1936
Scientific Session
Symposium—Uterine Bleeding
Dr. Hilliard E. Miller, presiding

THE NORTH LOUISIANA SANITARIUM

The North Louisiana Staff meeting was called to order, September 22, 1936, by the President with 20 regular members present. After the disposal of routine business, attention was turned to the scientific program.

Dr. Rigby presented several cases of brain injuries. The first case was that of an infant who had a small encephalo-meningocele. Dr. Wolfe spoke of the frequency of occurrence and indications for surgery. Dr. Rigby then described the findings and surgical procedure and mentioned that as far as he knows this case was the first in this country in which a piece of skull bone from a dead premature had been used for purpose of grafting. The graft, however, had not taken.

The second case was that of a Mr. S., injured in 1931 by a falling piece of iron that struck him on the vertex of the skull. When seen by Dr. Rigby he was complaining of headache. Spinal fluid was clear but definitely under increased pressure. Roentgen ray showed depressed fracture of the inner table of the skull causing pressure on the brain. The depressed inner table was elevated and followed by complete relief of symptoms to date. The operation was done in May 1931.

The next case was that of a colored woman who was struck in the right temporal region with a pair of pliers. Bleeding was found to be coming from the middle meningeal artery which was tied off and followed by an uneventful recovery.

The next case was that of Dr. W., aged 66, who was admitted to the Hospital Sept. 15, 1935, unconscious following an automobile accident with injuries of the head. The roentgen ray picture showed no fracture but the spinal fluid was bloody.

In a few days the patient developed a left sided hemiplegia. Drs. Kerlin and Gray were called into consultation. A diagnosis of a subdural hematoma was made and surgery advised. At operation, the diagnosis was confirmed and the clot removed. The patient had an uneventful recovery, the hemiplegia disappearing except for some slight tingling sensations. The doctor is now actively engaged in his practice and enjoying good health.

Dr. Green opened the discussion on Drs. Webb and Heard's case by describing a long difficult labor that had to be terminated by a high forceps delivery. There was much difficulty in resuscitating the child; however, after a half hour of mouth to mouth breathing, the infant began to breath. There was a large hematoma of the left temporal region. The morning following delivery, Dr. Webb was called in to see the infant who was having considerable respiratory embarrassment, but there were no cerebral symptoms. By noon muscular twitching was noticed on the left side and spinal puncture revealed bloody spinal fluid; 15 c. c. spinal fluid was removed and 30 c. c. of blood was given intramuscularly. Several cisterna punctures were done until the blood cleared up. A roentgen ray picture showed a depressed fracture in the left temporal region. Dr. Heard described the operation for the elevation of the depressed fracture, the removal of the blood-beneath the dura in that region. To date the patient has shown progressive improvement, but Dr. Webb stated that it was too early to tell just what effect the injury will have on the infant's mentality.

H. M. Trifon, M. D., Sec.

THE SHREVEPORT EYE, EAR, NOSE AND THROAT SOCIETY

The Shreveport Eye, Ear, Nose and Throat Society met in regular session at the Charity Hospital, the evening of Monday, October 5, 1936, at 7:30 o'clock. The president Dr. L. W. Gorton presided. The following members were present: Dr. R. H. Carter of Marshall, Texas and Drs. L. W. Gorton, T. D. Boaz, Claude LaRue, W. L. Atkins, and J. A. Wilkinson, of Shreveport. Dr. George Wolfe was a guest of the club.

Dr. Gorton presented a case of strabismus in a white boy about six years of age. The interesting feature was his inability to rotate either eye outward beyond the middle line. The question to be decided was whether there was paralysis, weakness, or absence of the external recti muscles, and the method of arriving at a diagnosis and treatment.

Dr. LaRue presented a young white girl, who was totally deaf, had cleared up for a time and became deaf again. There was a history of malaria and treatment by quinine, which might have had a bearing on the deafness. Her blood Wassermann was repeatedly negative, though she gave a positive Kahn three times. As a further aid to diagnosis a spinal Wassermann was suggested.

Dr. LaRue's second case was one of deafness in a man who had been struck on the right ear by a bush, since which time he has suffered from tenderness in and about the ear, deafness and vertigo. A thorough search had been made for foreign bodies in the external and middle ear. None was found. Roentgen ray of the mastoid was negative. No definite line of treatment was decided upon.

Dr. Wilkinson, assisted by Dr. Wolfe, presented a case of Schuller-Christian's disease characterized by proptosis of the right eye, diabetes inspidus, and rarefaction of the frontal bone. This case was of unusual interest due to the fact that only fifty-seven cases have been reported.

Dr. Wilkinson also presented a negro man, twenty-five years of age, who had had a bilateral cataract, the cause of which was undetermined. He had been checked for foci of infection, diabetes and syphilis. The second point of interest was the fact that after a simple iridectomy, the cataract was rapidly absorbed leaving a clear pupil and vision of 20/20 with correction.

Dr. Boaz presented a case of symblepharon in a young negro girl. The upper lid was adherent to the bulbar conjuctiva below the cornea giving the impression of absence of the eye-ball. Dr. Boaz stated his intention of freeing the adhesions and ascertaining the condition of the cornea.

The meeting was adjourned until the first Monday in November.

Dr. L. W. Gorton, Pres.
Dr. J. A. Wilkinson, Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

NOVEMBER 2 Board of Directors, Orleans Parish Medical Society, 8 p. m.

NOVEMBER 2 Eye, Ear, Nose and Throat Staff, 8 p. m.

NOVEMBER 4 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

NOVEMBER 4 Mercy Hospital Staff, 8 p. m.

NOVEMBER 4 Board of Governors, 1st and 2nd District Dental Society, 8 p. m.

NOVEMBER 6 Pathologic Conference, Hotel Dieu, 11 a. m. to 12 noon.

NOVEMBER 9 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.

NOVEMBER 10 Charity Hospital Dental Staff, 8 p. m.

NOVEMBER 11 Touro Infirmary Staff, 8 p. m.

NOVEMBER 13 Pathologic Conference, Hotel Dieu, 11 a. m. to 12 noon.

NOVEMBER 13 French Hospital Staff, 8 p. m.

NOVEMBER 16 Hotel Dieu Staff, 8 p. m.

NOVEMBER 17 Charity Hospital Medical Staff, 8 p. m.

NOVEMBER 18 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

NOVEMBER 18 Charity Hospital Surgical Staff, 8 p. m.

NOVEMBER 19 Eye, Ear, Nose and Throat Club, 8 p. m.

NOVEMBER 20 Pathologic Conference, Hotel Dieu, 11 a. m. to 12 noon.

NOVEMBER 20 I. C. R. R. Hospital Staff, 12 noon.

NOVEMBER 23 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. Election of Delegates to the Louisiana State Medical Society and Nominations for Officers, 1937.

NOVEMBER 24 Baptist Hospital Staff, 8 p. m.

NOVEMBER 25 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

NOVEMBER 27 Pathologic Conference, Hotel Dieu, 11 a. m. to 12 noon.

During the month of October, the Society held two special meetings, one joint scientific and third quarterly executive meeting, and one joint clinical meeting at Charity Hospital.

Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, was the guest of the Society at a special meeting held October 1, and spoke on "Medicine and the New Social Order."

On October 5, Mr. Archibald McIndoe of London, England, was the guest of the Society. He presented a paper on "Some Phases of Plastic Surgery."

At the joint scientific and third quarterly executive meeting, the following program was presented:

Continuous Drip Blood Transfusion—(Marriott). Indications for its use with report of cases.

By ..... Dr. Daniel N. Silverman

Remarks by Drs. Rudolph Matas and Louis Levy, and in conclusion Dr. Silverman explained slides showing the apparatus and method for transfusion. Dr. Sam Carlin exhibited a continuous drip blood transfusion apparatus of the type used by Marriott.

The Introduction of Leprosy into Louisiana.

By ..... Dr. Theodore J. Dimitry

Discussed by Drs. A. E. Fossier and Rudolph Matas.

Demonstration of Simplified Projection of Roentgen ray films.

By ..... Dr. E. R. Bowie

At the joint Clinical Meeting with the Orleans Parish Medical Society and the Charity Hospital Staff held in the Miles Amphitheatre, Charity Hospital, the following cases were presented and discussed by the members of the Society and the Charity Hospital Staff:

Dr. Chaille Jamison—Diffused toxic goiter in six year old colored female.

Drs. L. S. Charbonnet, Jr. and J. Roy Theriot—Two cases of mesenteric infarction with extensive resections.

Dr. F. F. Boyce—Primary streptococcus peritonitis.

Drs. Frank Cato and Wm. D. Norman—Bone lesion of humerus from inflammatory neoplasm.

Dr. Conrad G. Collins—Congenital deformity of the foot.

Dr. I. M. Gage—Cleidocranial dysostosis.

Drs. O. C. Cassegrain and H. R. Mahorner—Amebic hepatic abscess with rupture in the pleural cavity: Callander amputation.

Dr. P. H. Jones—Lung abscess.

Dr. Roy H. Turner—Syphilis of the stomach.

Dr. P. Gregory—Amyloid nephrosis.

Dr. Robert Bayley—Pituitary tumor.

The following doctors were elected to Active Membership: Drs. Peter Everett, Jr., Wm. Howard Gillentine, Robt. J. Mainegra, John G. Menville, Howard H. Russell, James W. Tedder and Geo. H. Upton. Dr. Richard W. Vincent was elected to Interne Membership.

We regret to report the loss by death of Drs. James R. Daboval and Joseph Hume.

Dr. R. H. Kampmeier has moved to Vanderbilt University School of Medicine, Nashville, Tennessee.

Dr. Geo. D. Lilly has moved to 333 Queen Ingraham Bldg., Miami, Florida.

Dr. Francis E. LeJeune was a guest speaker at the meeting of the American Academy of Ophthalmology and Otolaryngology held in New York City September 26 to October 3, 1936. Among others attending this meeting were Drs. L. W. Alexander, Chas. A. Bahn, W. R. Buffington, Chas. L. Cox, Val H. Fuchs, John B. Gooch. J. Browne Larose, Neal Owens, Victor C. Smith, Geo. J. Taquino and Wm. A. Wagner.

Dr. C. C. Dauer attended the Rocky Mountain Tuberculosis Conference held at Albuquerque, New Mexico, September 28 and 29.

Dr. H. W. Kostmayer attended the meeting of

the Fourth District Medical Society held in Shreveport on October 6, 1936.

Dr. Robert A. Strong was the guest speaker at the meeting of the Fourth District Medical Society held in Shreveport, October 6, 1936.

Dr. James T. Nix was the guest speaker at the meeting of the International Federation of Catholic Alumnae in Dallas October 4, 1936.

Dr. Isidore Cohn participated in a Fracture Symposium at the University of Pennsylvania Hospital during the meeting of the American College of Surgeons in Philadelphia, October 19.

Dr. Thos. B. Sellers was on the program of the Central Association of Obstetrics and Gynecology at Detroit, Michigan.

The members are urged to notify the Secretary's office of any changes in address.

TREASURER'S REPORT

ACTUAL BOOK BALANCE: 8/31/36	$1,768.03
September Credits:	$ 326.39
	$2,094.42
September expenditures:	$ 437.59
ACTUAL BOOK BALANCE: 9/30/36:	$1,656.83

LIBRARIAN'S REPORT

During the months of July-September, 136 books were added to the Library. Of these 79 were received by binding, 29 by gift, 3 by purchase and 25 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

The Library has loaned 1,722 books and journals to doctors during the quarter, or more than one each month to each member of the Society. In addition 498 items have been loaned to students, making a total of 2,220. These figures do not include the great use of books and journals within the Reading Room.

On request of physicians, members of the staff have collected material on the following subjects during the quarter:

Bronchiectasis.
Health insurance.
Bone retractors.
Cystine content of finger nails in arthritis.
Myocarditis.
Eye and endocrines.
Takata—Ara reactions.
X-ray treatment in leukemia.
Leprosy in Louisiana.
Complications of ectopic pregnancy.
Agents used to produce hyperpyrexia.
Accessory mammary glands.
Diodoquin.
Flagellates.
History of anesthesia.
Florence's reaction.
History of urology in Louisiana.
Personal bibliography of Ansel M. Caine.
Picture of kymograph.
Carcinoma of lung.
Inhibin.
Resuscitation.
Acrodynia.
Vinethene.
Ether convulsions.
Heredity in disease.
Cyst of lung.
Skillern's fracture.
Psychobiology.
Yoga method.
Electric shock to bones and peripheral nerves.
Perityphlitis.
Plocach.
Diabetic coma.
Differential diagnosis in jaundice.
Atresia of posterior nares.
Legge-Perthes' disease.
Esophageal bleeding.
Experimental research on cause of death in air embolisms.

NEW BOOKS

Montague—Why bring that up? 1936.

Hawes, J. B.—Diagnosis and Treatment of Pulmonary Tuberculosis. 1936.

Herrmann, G. H.—Synopsis of Diseases of Heart and Arteries. 1936.

Herrmann, L. G.—Passive Vascular Exercises. 1936.

Oppenheimer, B. S.—Treatise on Medical Jurisprudence. 1935.

Bray, W. E.—Synopsis of Clinical Laboratory Methods. 1936.

Knopf, S. A.—Heart Disease and Tuberculosis. 1936.

N. Y. Academy of Medicine—Diseases of the Respiratory Tract. 1936.

Murray, J. W.—Examination of Patient and Symptomatic Diagnosis. 1936.

Stimson, P. M.—Manual of Common Contagious Diseases. 1936.

Medical Papers Dedicated to H. A. Christian. 1936.

Carey, E. J.—Medical Science Exhibits; Century of Progress. 1936.

Hansel, F. K.—Allergy of Nose and Paranasal Sinuses. 1936.

Auenbruegger, Leopold—On Percussion of the Chest. (translation). 1936.

Krause, A. C.—Biochemistry of the Eye. 1934.

Stieglitz, E. J.—Abnormal Arterial Tension. 1935.

Haden, R. L.—Dental Infection and Systemic Disease. 1936.

Hartman, C. G.—Time of Ovulation in Women. 1936.

Milbank Memorial Fund—Next Steps in Public Health. 1936.

Commarota, Angel—La tension mediana dinamica. 1936.

Southern Surgical Association—Transactions. 1935.

American College of Surgeons—Yearbook. 1935.

Rockefeller Foundation—Annual Report. 1935.

American Medical Association—New and Non-official Remedies. 1936.

A. M. A.—Council of Pharmacy and Chemistry—Reprint of Reports. 1935.

Bram, Israel—Exophthalmic Goiter and its Medical Treatment. 1936.

Homans, John—Textbook of Surgery. 1935.

Christopher, Frederick—Minor Surgery. 1936.

Stander, H. J., ed. Williams' Obstetrics. 1936.

Cuchny, A. R.—Textbook of Pharmacology and Therapeutics. 1936.

Christian, H. A. ed.—Oxford Medicine—Supplementary volume. 1936.

Gilbert C. Anderson, M. D., Sec.

LOUISIANA STATE MEDICAL SOCIETY NEWS

ANNOUNCEMENT BY COMMITTEE ON SCIENTIFIC WORK

Below are listed the Sectional Chairmen for the approaching meeting of our Society to be held in Monroe April 26, 27 and 28, 1937. According to all indications we have every reason to believe that we will have one of the most interesting and successful meetings in the history of our Society. Doctors who wish to be on the program should communicate with the Chairman of the Section in which they desire to appear.

Medicine and Therapeutics: Dr. Robert Bernhard, New Orleans

Pediatrics: Dr. Herman A. White, Alexandria

Nervous Diseases: Dr. J. D. Young, Shreveport

Bacteriology and Pathology: Dr. E. Von Haam, New Orleans

Radiology: Dr. L. W. Magruder, New Orleans.

Gastro-Enterology: Dr. Jos. E. Knighton, Jr., Shreveport

General Surgery: Dr. John G. Snelling, Monroe

Gynecology and Obstetrics: Dr. H. B. Alsobrook, New Orleans

Eye, Ear, Nose and Throat: Dr. Lionel Lorio, Baton Rouge

Urology: Dr. U. S. Hargrove, Baton Rouge

Public Health and Sanitation: Dr. W. H. Perkins, New Orleans

Orthopedic Surgery: Dr. A. Scott Hamilton, Monroe

TRI-PARISH MEDICAL SOCIETY

The Tri-Parish Medical Society held its regular monthly meeting in Tallulah, Louisiana, October 6. 1936. After a most delicious supper at the Post-Inn Cafe in Tallulah the members assembled to the club room. The meeting was called to order by the president. The following members were present:

Drs. J. P. Davis, D. F. Davis, B. R. Burgoyne, H. C. Sevier, G. W. Gaines, Thomas P. Sparks, A. T. Palmer, Joseph Whitaker, and Wm. K. Evans. The visitors were Drs. B. J. Aymond, Acting Director of East Carroll Parish Health Unit, Dr. M. W. Hunter of Monroe, La.

The essayest was Dr. B. M. McKoin of Monroe, La; subject, "Gonorrhea and Its Usual Phases". Dr. McKoin's paper was discussed by Dr. Sparks and complemented by the members of the society.

Dr. Joseph Whitaker, Pres.

Dr. Wm. K. Evans, Sec.-Treas.

FOURTH DISTRICT MEDICAL SOCIETY

The regular meeting of the Fourth District Medical Society was held October 6, 1936. Dinner was served in Shreveport Charity Hospital dining room at 7:00 P. M. Members and visitors were entertained by the Gilliam negro quintet through courtesy of Dr. Guy Caldwell.

The meeting was called to order by our president, Dr. McDade, of Minden, La., who introduced Dr. Kostmayer, the president of the State Society. Dr. Kostmayer enumerated the progress made by the Legislative Committee in Baton Rouge in having certain laws detrimental to organized medicine killed in committee. He also called attention to the progress being made in maternal welfare over the state.

Dr. J. P. Sanders of Caspiana, gave a very interesting paper on impotence, outlining the different types and stressing the treatment of each type.

Dr. J. R. Stamper opened the discussion and elected to show a motion picture illustrating a new suction type of treatment for undescended testicles.

Our guest speaker, Dr. Robert Strong, Professor of Pediatrics at Tulane University, presented an outlined talk and moving picture of vomiting in infancy. Discussion was opened by Dr. R. T. Lucas, of Shreveport.

Dr. George Wolfe, of Shreveport, presented a case of Schuller-Christian's Disease from the pediatric service of the Shreveport Charity Hospital.

Following the scientific program the following officers were elected by acclamation:

President: Dr. Tatum, of Homer, La.
Vice-President: Dr. J. B. Hall, Benton, La.
Secretary: Dr. Raymond Mays, Shreveport, La.
T. M. Oxford, Sec.-Treas.

EXTENSION TEACHING IN OBSTETRICS

The Extension Lecture Courses in Obstetrics held in Minden and Ruston were well received by the respective medical groups.

Dr. Joseph W. Reddoch conducted the course in Minden and Dr. Harry Meyer the course in Ruston.

As already published the Committee on Medical Education will offer similar courses as follows:

October 26-30—Bastrop—Fifth District—Dr. A. Caire, Jr. Meeting in Court House.

November 2-6—Hammond—Sixth District—Dr. P. J. Carter. Meeting in City Hall.

November 9-13—Natchitoches—Eighth District—Dr. C. R. Mays. Meeting in Post Office Building.

November 16-20—Opelousas—Seventh District Dr. Peter Graffagnino.

November 30-December 4 — Jennings — Seventh District—Dr. T. B. Sellers. Meeting in Court House.

December 7-11—Franklin—Third District—Dr. E. L. King.

December 14-18—Donaldsonville—Sixth District —Dr. W. Levy. Meeting in Elks Hall.

AN INVITATION TO THE SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association will hold its Thirtieth Annual Meeting in Baltimore, Maryland, November 17-20, 1936. All of the scientific and sectional meetings, as well as the technical and scientific exhibits, will be held in the new Fifth Regiment Armory. We believe that this will be one of the largest, if not the largest meeting in attendance that the Association has hitherto held. We also believe that from a scientific and clinical standpoint it will be as interesting as any previous meeting.

From the preliminary program, we confidently expect it to be worth the time and expense of any member in the profession to attend. Particular attention is being given to the various specialties, and an unusual effort is being made to interest the general practitioner.

Baltimore has clinical facilities and hotel accomodations to take care of all visitors with comfort. Extra-scientific activities will be numerous, including golf, boat trips, theatres, as well as many things of historic and picturesque value. Plans are being made for an offical After-Baltimore Cruise down the Chesapeake Bay, leaving late on Friday afternoon, November 20, visiting Yorktown, Jamestown and Williamsburg, and returning to Baltimore early Sunday morning, November 22.

Those interested in the Arts will find The Walters Art Gallery, The Municipal Art Building, The Maryland Historical Society, The Maryland Institute, The Peabody Institute sufficient to occupy their spare moments beyond anyone's conception.

We, the Profession in Baltimore, as entertaining hosts, and the Southern Medical Association extend to you, and through you to all members of the Medical Profession in your State, a cordial invitation to attend this Medical Convention. Perhaps this could be best called to their attention by publishing this letter in the Journal of which you are the Editor.

Sincerely yours,

Charles W. Maxson,
Chairman of Publicity Committee
Sydney R. Miller,
General Chairman, Committee on Arrangements

NEWS ITEMS

Prof. F. E. LeJeune, of the faculty of the Graduate School of Medicine, The Tulane University of Louisiana, conducted a course on "Direct and Indirect Laryngoscopy" in connection with the meeting of the American Academy of Ophthalmology and Otolaryngology held in New York September 26-October 3, 1936.

Prof. C. C. Dauer, of the faculty of the Graduate School of Medicine, The Tulane University of Louisiana, attended the Rocky Mountain Tuberculosis Conference held at Albuquerque, New Mexico, September 28 and 29, 1936.

Dr. H. W. Kostmayer, Dean of the Graduate School of Medicine, The Tulane University of Louisiana, attended the meeting of the Fourth District Medical Society held at Shreveport, La. on October 6, 1936.

Dr. Henry W. E. Walther, senior urologist to the Southern Baptist Hospital, addressed the Second District Medical Society at Kenner on October 15. His subject was "Urinary Antiseptics."

Dr. Charles A. Bahn attended the recent meeting of the American Academy of Ophthalmology in New York and conducted a course in ophthalmic endocrinology, as well.

A large number of Medical Officers of the United States Public Health Service have been directed by the Surgeon General to proceed to New Orleans for the purpose of attending the American Public Health Association meeting.

AMERICAN PUBLIC HEALTH ASSOCIATION

One of the largest medical meetings held for a long time in New Orleans took place October 20-

October 23. The attendance included physicians, Public Health workers and others from all over the country. Due to the fact that the meeting is being held while the Journal is in press, it is impossble to give any details of this great convocation.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examinations and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in the various cities in the United States and Canada on Saturday, November 7, 1936, and on Saturday, March 6, 1937.

The next general examination for all candidates (Groups A and B) will be held in Atlantic City, N. J., on June 8 and 9, 1937.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania. Applications for these examinations must be filed in the Secretary's office not later than sixty days prior to the scheduled date of examination.

BUREAU OF HUMAN HEREDITY

The object of this Bureau is collection on as wide a scale as possible of material dealing with human Genetics. Later, the tasks of analysis of material and distribution of the information available will be added.

The Bureau is directed by a Council representing medical and scientific bodies in Great Britain. It is affiliated to the International Human Heredity Committee, which ensures co-operation in all areas where research is proceeding.

The Council would be grateful to receive all available material from Institutions and individuals, furnishing well-authenticated data on the transmission of human traits whatever these may be. Pedigrees are particularly desired; twin studies and statistical researches are also relevant. As research workers and others who send in material may in some cases wish to retain the sole right of publication (or copyright) those who so desire are asked to accompany their material with a statement to that effect.

Material should be given with all available details in regard to source, diagnostic symptoms and the name and address of the person or persons who vouch for accuracy. All such details will be regarded as strictly confidential.

Reprints of published work would be most acceptable. Further, many authors when publishing material may also have collected a number of pedigrees which they have been unable to reproduce in detail. It is the object of the Council that such records, by being included in the Clearing House, should not be lost.

Chairman: R. Ruggels Gates.

Executive Committee:

R. A. Fisher, J. B. S. Haldane, E. A. Cockayne, J. A. Fraser Roberts, L. E. Halsey (Hon. Treasurer), C. B. S. Hodson (Hon. Gen. Secretary).

115, Gower Street, London, W.C.1, England

ARMY MEDICAL LIBRARY

The Medical Library Association at its Annual Meeting, June 22, 1936, passed a resolution recommending the appropriation of adequate funds for the Army Medical Library and its Index-catalogue, a copy of which is attached. In order to secure the widest possible attention in medical circles, this resolution is being distributed in four ways:

(1) by sending it direct to the President of the United States, and other government officials concerned (in January, 1937),

(2) by publication in medical journals,

(3) by sending it to our own members, with the request that they urge the organization of which they are a part, as well as all other local medical associations and institutions not members of our Association, to adopt similar resolutions to be sent to their local members of Congress, requesting their support of these measures,

(4) by sending it to the secretaries of national and state medical societies, with the request that they urge similar action by their organization.

Please urge your readers to request their Congressmen, upon the convening of the new Congress in January, 1937, to support these measures.

What is needed is to bring home to Congressmen the fact that the whole medical profession of the country does benefit by this great Library and its Index-catalogue, and does want it to have this material. Letters from individual doctors to their Congressmen would also carry weight. We hope and believe that a really concerted effort by the entire medical body will help to secure the desired funds for the Army Medical Library.

Janet Doe, Sec.

Dr. Homer Joseph Dupuy prominent ear, nose and throat specialist of New Orleans died September 28, 1936 at Hotel Dieu following recurrence of an illness which first afflicted him a year ago. Dr. Dupuy was noted for his pioneer work in connection with cancer of the upper jaw. He invented many surgical instruments which bear his name. He was Professor of oral surgery at the Loyola University School of Dentistry, Professor and Director of the Department of Otolaryngology at the Louisiana State University Medical Center and

organizer and one of the senior surgeons of the nose and throat department of Charity Hospital. He had served as President of the Louisiana State Medical Society, President of the Orleans Parish Medical Society, President of the Hotel Dieu staff and Councilor of the Southern Medical Association. He served as a member of the New Orleans public library board and was appointed as the representative of Loyola University on the New Orleans Police board. He was also a member of the Shakespearean Society. Dr. Dupuy was the author of many professional papers.

Dr. James R. Daboval, surgeon and physician of Arabi, Louisiana, died at Mercy Hospital, New Orleans October 6, 1936 after an illness of three weeks. He was graduated from Jesuit High School and got his degree in medicine at the St. Louis University. He had practiced for nine years and was a member of the Loyola faculty and of the Mercy Hospital staff.

Dr. Joseph Hume, veteran professor of urology at Tulane University for twenty five years before his recent resignation, died at his home in New Orleans Saturday, October 17, 1936 after an illness of three weeks. He was nationally known as a urologist and was consultant in that field at Touro Infirmary.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census reports that for the week ending September 18 there were 146 deaths in the city of New Orleans, divided 93 white and 53 colored. This gave a rate for the group as a whole of 15.9, for the white 14.2 and for the negro 19.9. The infant mortality rate for this week was 87, with the almost unheard of occurrence of the white race being higher than that of the negro. The following week, ending September 26, there was quite a considerable increase in the deaths of the city due largely to the marked increase in the negro death rate which was 31.9 as contrasted with the white of 13.3. The total death rate was 18.7, there being 172 deaths apportioned 87 white and 85 colored. There was a big increase in the infant mortality which was 139 with the deaths divided almost equally between the two races. The following week, ending October 3, saw a sharp drop of exactly 40 deaths in the city as contrasted with the previous week. The 132 deaths, divided 73 white and 59 colored, gave a rate for the city as a whole of 14.3, for the white 11.2 and for the negro 22.1. The infant mortality rate this week was 64.

For the first 40 weeks of the year the death rate in New Orleans has been somewhat higher than that of the corresponding 40 weeks of the previous year. So far for 1936 the rate has been 18.5 as compared to 16.2 for last year. The year 1936 seems to be a more lethal year than the previous one because, glancing down the list of cities elsewhere, in practically every instance the rate is above that of 1935. Just why there should be more deaths this year than last, it is impossible to state definitely . It may be now that the depression is on its way out and people are living higher, more are getting killed in automobile accidents and more misbehaving. Some sociologists may contend that now we are beginning to feel the effects of the barren years on the health and nutrition of the child population.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the State of Louisiana, which contain the following summarized information: For the week ending September 19, the following diseases appeared in double figures; 47 cases of malaria, 40 of pneumonia, 31 of cancer, 20 of pulmonary tuberculosis, 15 each of syphilis and gonorrhea, 14 of typhoid fever and 11 of diphtheria. The typhoid fever cases, as well as those of diphtheria and scarlet fever, were scattered throughout the State. One case of poliomyelitis was reported from Caddo Parish and one from LaSalle. For the week ending September 26, malaria again led all reported diseases with 42 cases listed, followed by 28 cases of gonorrhea, 25 of pneumonia, 23 of typhoid fever, 20 each of pulmonary tuberculosis and cancer and 16 of diphtheria. Davis Parish with 5 cases and Acadia with 4 led the parishes of the State reporting typhoid fever. One case of poliomyelitis was reported from Bienville Parish. The next week, ending October 3, was characterized by the reported cases of syphilis, as is accustomed, leading all other reported diseases in this week with 75 cases listed. This was followed by 53 cases of malaria, 38 of pulmonary tuberculosis, 31 of cancer, 27 of pneumonia, 18 of diphtheria and 17 each of gonorrhea and typhoid fever. The typhoid fever cases were scattered for the most part all through the State, but 6 instances were reported from Caddo Parish. From the same Parish were reported 3 cases of undulant fever. Beauregard Parish reported one case of poliomyelitis. In the week ending October 10, malaria, for the third week of the last four, was at the top of the diseases listed by the Bureau of Epidemiology with 55 cases. This was followed by 44 cases of pneumonia, 35 of pulmonary tuberculosis, 27 of cancer, 26 of syphilis, 15 of diphtheria and 14 of influenza. In this week there were only 4 cases of typhoid fever reported. Another case of poliomyelitis was listed, this time from St. Landry Parish. Amongst the other unusual diseases listed

were 1 case of typhus fever from East Baton Rouge Parish, 1 of undulant fever from Calcasieu and 1 of paratyphoid fever from Lafourche.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. James Byron Vaughan, Monroe.

President-Elect—Mrs. George D. Feldner, New Orleans.

First Vice-President—Mrs. F. G. Ellis, Shreveport.

Second Vice-President—Mrs. T. H. Watkins, Lake Charles.

Third Vice-President—Mrs. E. B. Middleton, Homer.

Fourth Vice-President—Mrs. R. R. Arceneaux, Welsh.

Recording Secretary—Mrs. C. Grenes Cole, New Orleans.

Corresponding Secretary—Mrs. Joseph P. Brown, Monroe.

Treasurer—Mrs. Courtland P. Gray, Monroe.

Parliamentarian—Mrs. R. T. Lucas, Shreveport.

To the Members of the Woman's Auxiliary to The Louisiana State Medical Society: As we slip from vacation land into the harness of routine work, let us get into full swing for another year of striving and serving. An auxiliary is not a woman's club, but a service group to the medical society. To serve an organization we must do those things which please it and forward its interests. So well did its organizers plan, that the policies and objectives have required no changes. Quoting from the speech of the public relations committee of the woman's auxiliary to the A. M. A., "The particular task is that of education of the public in accepting health leadership from the medical profession. It earnestly seeks, not only to defend human life, but to surround it with safeguards through education. The busy physician cannot give all his attention to demands of truth on which its fortifications are built, so we wives who are willing to follow their leadership are most logical of the laity to carry out the aims of the profession. As an individual wife, one may be accused of promoting her husband; as a member of the medical auxiliary she works under control of organization, thus personalities are banned."

In our Louisiana Auxiliary, the Public Relations program has been especially emphasized, consequently, we should become acquainted with health conditions in our own parish and state. We should know the phases of health which are being stressed, and those which are being neglected. It would be well to know the aims of our own medical society and other organizations and how these can best work together to bring desired results.

Let us plan to give Public Relations programs so that we may make people more health minded, bring cooperation of efforts along lines of health and make it a force in securing our goal. We can educate our future citizens to be happy by constantly trying to promote community conditions which will maintain high standards of health and medical professional leadership in all such activities.

A letter from our national president, Mrs. Fitzgerald, expresses the hope of strengthening the organizations by bringing more closely together, state and national groups. "We should put forward our untiring efforts to enlarge the circulation of Hygeia, so that this authentic magazine many carry its message to as many people as possible."

I should like to urge the closer relationship of our state and parish auxiliaries. Let us keep in mind during the fall and winter meetings our "Doctors Day" celebration and activities regarding the fund for indigent physicians. Also let us be reminded of the key-note of our first medical auxiliary; that of promoting closer contact between the families of physicians; to assist in lightening the burdens of humanity and to help preserve the health of the people.

Finally in extending my very best wishes to each member of the woman's auxiliary to the Louisiana State Medical Society, I am again asking your unlimited cooperation.

Cordially yours,
Mrs. J. B. Vaughan, President.

OUACHITA PARISH

The program of the Ouachita Parish Auxiliary starting with the first fall meeting is as follows:

October 21—Luncheon, with Mrs. Mengis, Mrs. Rizzo and Mrs. Walsworth as hostesses. Mrs. Pracher read a biography of Dr. E. Lewis.

November 18—Mr. Graves, Mrs. Peters, Mrs. Milam, Mrs. Gregory and Mrs. Williams will be hostesses on a boat ride to Pine Top.

December 16—Christmas offering, with Mrs. Prather, Mrs. Vaughan and Mrs. Wright as hostesses.

January 20—Luncheon. Mrs. McHenry, Mrs. Gray and Mrs. Perot will be hostesses with Mrs. McHenry reading a paper on "Romance of Medical Men of the South."

February 17—Luncheon, with Mrs. Peters and Mrs. Shlenker as hostesses and Miss Sue Graves will give a travel talk.

Mrs. William Bendel,
Publicity Chairman.

ORLEANS PARISH

The Woman's Auxiliary to the Orleans Parish Medical Society enjoyed its first meeting and reception of the Fall season on Wednesday afternoon, October 14. We all felt the enthusiasm and

inspiration of our new President, Mrs. W. P. Gardiner.

Committees have been very busy during the summer making their plans for the winter activities and this promises to be an interesting year full of accomplishments. Among the most worthwhile projects is the co-operation of the Auxiliary with the Tuberculosis and Public Health Association of New Orleans in planning for health education in the schools. Another objective of this year's program, will be the re-conditioning of books in the Medical Library of the Orleans Parish Medical Society. These books and medical journals are at the disposal of both Tulane and L. S. U. medical students as well as members of the Medical Society.

Our Social Hygiene committee also has plans for extending its work into the institutions of the city.

During the afternoon we were fortunate in having with us a guest speaker, Dr. Frederick L. Fenno, President of the Orleans Parish Medical Society.

Following the program, everyone enjoyed the tea hour with the full opportunity of visiting with friends.

Mrs. Edgar Burns,
Publicity Chairman.

JEFFERSON DAVIS PARISH

The Jefferson Davis Parish Medical Auxiliary resumed its regular meetings October 13, after the summer vacation. This meeting was held at the home of the President, Mrs. G. W. Remage in Jennings.

Last year, the Auxiliary gave the high schools of Jennings and Welsh an introductory subscription of six months to Hygeia. At this meeting it was decided to renew the subscriptions for a period of one year.

We acquired our third bride since this time last year. With two or three more prospects, we may be entitled to a citation in another year.

Mrs. John M. Whitney is our new bride member Mrs. Whitney, formerly of New Orleans, is the wife of the Parish Health Unit Director.

There was no program for this meeting, but a social hour was enjoyed during which time the members told of their summer pleasures.

Mrs. Claude A. Martin,
Publicity Chairman

Dear Auxiliary Members:

Reading this issue of the Journal is like arriving home after a vacation trip. No matter how far or where you have been, it is always a happy moment when we step over the threshold of our own door and come in contact again with the beloved and familiar things that make up a home.

Our President's inspiring, beautiful message is like our home, and the news from the parish auxiliaries are the many furnishings and gadgets that make the home beautiful and livable. Let us keep on making our home more beautiful and let the happiness of the one big family that we are, shed its lustre upon the community in which we live.

Mrs. George D. Feldner, Chairman,
Press and ublicity.

BOOK REVIEWS

Dental Infection and Systemic Diseases: By Russell L. Haden, M. A., M. D. 2d ed. rev. Philadelphia, Lea and Febiger, 1936. pp. 163. Price $2.50.

Dr. Russell L. Haden, Chief of the Medical Division, Cleveland Clinic, Cleveland, Ohio, formerly Professor of Experimental Medicine, University of Kansas School of Medicine, Kansas City, Kansas is certainly sufficiently authoritative to publish his findings and work.

Thirty-five case histories are reported where removal of dental focal infection improved systemic conditions in humans, or bacteria from the dental infections produced similar lesions in rabbits. This work is certainly worthy of full cognizance of both the medical and dental professions.

The author's discussion of laboratory technic to verify clinical and radiographic findings is elaborate with detail and statistics. Periapical, periodontal and residual infections are all treated in detail with stress laid upon the inadequacy of radiographic and blood chemistry in determining the potential danger of the dental infection. His just plea is for prevention of decay and pulpless teeth.

F. Harold Wirth, D. D. S.

International Clinicis, Vol. II—June, 1936. Philadelphia, J. B. Lippincott Co., 1936. pp. 327. Price $2.50.

The progressive physician constantly on the alert for reliable information to keep him abreast of the times can do no better than review the issues of the International Clinics. One soon learns that here will be found articles of paramount importance in all branches of medicine, splendidly and fully presented and accompanied by fine illustrations and bibliographies. The present volume is worthy of its predecessors. Among the many contributions is a comprehensive study of the

"Erythrocyte Sedimentation Test" by M. M. Wintrobe, M. D. Shortage of space does not permit of a further description of the book.

I. L. ROBBINS, M. D.

Clinical Heart Disease: By Samuel A. Levine, M. D. Philadelphia, W. B. Saunders Co., 1936. pp. 445. Price $5.50.

Written in the flowing easy style of the master, thoroughly at home in his subject, this book has much to charm and inform the reader who would know the diagnostic trends and therapeutic maneuvers of modern cardiology. The author informs us that he has not attempted to write a text book in the classical style. No bibliographical matter is to be found in the book and the authorities quoted are exceedingly few. He acknowledges his debt for the many borrowings he has made and in an inimitable way presents his subject so that one is aware that this book is the outcome of very wide reading and a very large personal experience and the discriminating wisdom that comes with time, thoroughness and trials. Not all of the subject matter is of the same degree of excellence. To some there may be disappointment in not finding more frequent allusions to the literature. But as a whole it is a splendid achievement and one which must be noted by those interested in cardiology. Of particular interest to the reviewer are the many clinical observations to which the author calls attention and his ability to reveal to the general practitioner the possibility of practising modern cardiology practically, properly and economically. His remarks on prognosis are splendid.

I. L. ROBBINS, M. D.

Time of Ovulation In Women: By Carl G. Hartman, Baltimore. The Williams & Wilkins Company, 1936. pp. 226. Price $3.00.

This complete compact little volume of 198 pages deals with the physiology of reproduction, accentuating ovulation time. Different methods of determining the period of ovulation are discussed and evaluated. The author's excellent studies of this subject on Macaccus rhesus monkeys are included. By comparison and critical studies of other workers in this field, he concludes that there is a definite period of ovulation in the female with a relative, though still uncertain, "safe period." An excellent volume in every detail.

CONRAD G. COLLINS, M. D.

Allergy of the Nose and Paranasal Sinuses: By French K. Hansel, M. D., M. S. St. Louis, C. V. Mosby Co., 1936. pp. 820. Price $10.00.

This is most excellent and comprehensive monograph dealing with the anatomy, physiology, biochemistry, bacteriology and histopathology of the paranasal sinuses. The subject matter is discussed from various points of view presenting the opinions voiced by authorities in these subjects. The chapters on the chronic inflammatory diseases of the nose and paranasal sinuses is well worth reading. The value of zinc ionization, its possibilities and hazards are thoroughly considered. Hyperplasia of the sphenoid and ethmoids and the presence of polyps are frequently true manifestations of allergic rhinitis and this condition is now being recognized more frequently than in the past.

This monograph should be productive of disseminating a vast amount of knowledge relative to that elusive subject of allergy. It contains a wealth of valuable information well compiled and excellently presented.

F. E. LEJEUNE, M. D.

Disability Evaluation: Principles of Treatment of Compensible Injuries: By Earl D. McBride, B. S., M. D., F. A. C. D., Phila., J. B. Lippincott Co. 1936. pp. 623. Illus. Price, $8.00.

This book fills the demand for a publication that will give the industrial surgeon a comprehensive, accurate and scientific work covering the field of diagnosis, treatment and prognosis in compensible cases. Besides this the laws governing such cases are given in full. Particular attention is given to methods used to determine the percentage of disability following all types of crippling accidents and these methods are based on arguments and data that may be succinctly presented to insurance carrier, judge or jury. They form a welcome substitute for the usual guesswork. The chapters devoted to treatment are particularly thorough. There is a distinct leaning towards the newer methods of skeletal traction diagrams to drive home the lessons.

The following is a partial list of the chapter headings:

Workmen's Compensation Laws.
Standardizing Disability Evaluation Methods.
Examination of the Disabled Person.
Examination of the Back.
Examination of the Hip.
Examination of the Knee.
Examination of the Head Injury Cases.
Ankylosis of Various Joints.
The Disability of Fractures.

The reviewer has read this book with genuine enjoyment and believes it to be an indispensible addition to the literature on industrial surgery.

E. A. FICKLEN, M. D.

Exophthalmic Goitre and its Medical Treatment: By Israel Bram, M. D. Second edition completely revised and enlarged with 79 illustrations. St. Louis. The C. V. Mosby Company, 1936. pp. 456. Price, $6.00.

This author treats his subject not as a specialist,

though he is one, but discurses with a partisan thought that Graves' disease is a malady that can be most successfully treated by medical, psychotherapeutic and hygienic measures. He emphasizes his conviction, e.g., that the disease is constitutional and refuses to subscribe to the belief that it is of thyrogenous nature. In this latter he is in accord with many; however, throughout his book, he is augmentative, and makes his work thereby, most interesting and instructive.

Chapter I deals with the nature and etiology of the disease, yet it leaves a desire for a definition and an acceptable pathogenesis. It is a chapter of, it is, and it isn't. Exophthalmic goitre is a disease with a protrusion of eye that may exist without a protrusion.

It is a goitre without a goitre. Exophthalmic goitre sine exophthalmic goitre. It is realized how correct it is to use psychotherapy until a better understanding of its pathogenesis is had. Focal infections, general infections, intoxications, sympathetic disturbances, and so on: each is well considered and left with the following: "that Graves' disease is a dysfunction—, and usually (not constantly) accompanied by hyperplasia of the thyroid gland and by exophthalmos."

In Chapter II, psychic trauma in the etiology of exophthalmic goitre is considered. The author discusses in Chapter III, symptomatology: in IV and V, the thyroid gland and exophthalmos. The latter chapter is disposed of in a few pages as if the protrusion of the eye was but a small part in exophthalmic goitre. All theories advanced in the pathogenesis of the eye's protrusions has to do with a force from behind the eye. The action of the oblique muscles pulling the eye from the orbit has been neglected as a hypothesis, yet most tangible.

Read the book, particularly if you are not a surgeon. It deals with the treatment other than surgery. It is full of most interesting observations.

THEODORE J. DIMITRY, M. D.

Recent Advances in Genito-urinary Surgery: By Hamilton Bailey, M. D., F. R. C. S. and Norman M. Matheson, M. B., F. R. C. S., M. R. C. P. Phila., P. Blakiston's Son & Co., Inc., 1936. pp. 213. Price

This little book of 200 pages, co-authored by two British urologists, is designed to cover only that which is new, or comparatively new, in the field of urology. In addition, they have limited the discussion of each topic to the essential points. As the result, the book is unusually compact, but, at the same time, is complete in the sense that all phases of urological practice are considered. The work can be of value only to advanced students of urology or those in active practice, as it presumes a knowledge of the essential features of all subjects discussed.

Some chapters are particularly well presented; notably the first, on intravenous pyelography, in which the advantages of this method of diagnosis and its technic are set forth in detail, followed by a frank discussion of its limitations.

On the other hand, in many instances one finds only a casual reference to a subject, as in the case of hypospadias. Only six lines are devoted to this and the reader is referred to special articles and standard texts for additional information.

From this it may be seen that this book is in no way to be considered a complete source of information on all that is new in urological practice, but is rather an index and summary of recent and substantial advances.

W. E. KITTREDGE, M. D.

A Textbook of Surgery: By John Homans, Springfield, Charles C. Thomas, 1935. pp. 2131. Price, 8.00.

In 1206 pages this textbook gives the student a thorough introduction to the study of surgery. Most of the text is concerned with the clinical aspects of surgical affections, but one of the admirable qualities is that the historical aspects have not been entirely forgotten. At the beginning of each chapter is a short historical review. Technics of surgical procedures are not given in detail but sufficient for the student. For the practitioner it is a good review of the scholastic presentation and for the student it is one of the good textbooks of surgery.

HOWARD R. MAHORNER, M. D.

Synopsis of Diseases of the Heart and Arteries: By George R. Herrmann, M. D., Ph. D. St. Louis, C. V. Mosby Co. 1936. pp. 344. Price $4.00.

Doctor Herrmann has written a book that should prove of inestimable value to the student and the practitioner. He has admirably succeeded in synthesizing succinctly significant subject matter with a splendid simple literary style. Complete yet concise, it conveys to the student and the doctor, crowded for time and unable at any moment to refer to large text books, the modern concepts of modern diagnostic procedures and therapeutic measures that are factual and practical. The illustrations are both numerous and well chosen. The book is small and handy. To those of us who know Dr. Herrmann it is no surprise to note the tremendous amount of material that he has succeeded in incorporating into this comparatively slim book. It is simply a confirmation of the fact that the author is among the leading authorities in cardiology in this country.

I. L. ROBBINS, M. D.

Minor Surgery: by Frederick Christopher, S. B., M. D., F. A. C. S., 3rd ed. reset. Phila., W. B. Saunders Co., 1936. pp. 1030. Price $10.00.

In the third edition of his book on minor surgery the author has included all outstanding recent contributions to surgical literature. Some of the new material deals with such subjects as bacteriophages, DeTakats method of ambulatory vein ligation, leech treatment of phlebitis, Wangensteen's stomach suction apparatus, and injection treatment of hernia.

As is so well said in the foreword by Kanavel, "His book is no mere compilation from previous texts; its source is his wide experience, not only in his field, but in general surgery and from this experience he has chosen wisely and emphasized well".

The older sections which have been amplified include: fractures, which are covered most thoroughly; head injuries; pilonidal sinus; blood transfusion; treatment of ileus.

Chapter XXIV titled, "The Surgical Intern" covers the thoughts of every surgeon as to the interne's duties. It should be read by every medical student before his sojourn into a hospital.

In the reviewer's opinion, the only criticism of this book on minor surgery is that it gives so little space to a discussion of the subject of bandaging, which is essential for efficiency, comform and appearance.

In conclusion, this revised edition covers the subject of minor surgery most thoroughly. For a text-book compiled from so many surgical writers it has continuity and is most enjoyable reading.

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